This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

LANE MEDICAL LIBRARY STANFORD
2 45 0416 9346

LANE

MEDICAL LIBRARY

SEAL OF THE LELAND STANFORD JUNIOR UNIVERSITY
SEMPER VIRENS
1885

LEVI COOPER LANE FUND

GIFT OF
Dr W. S. Thorne

for Dr Walter Scott Thorne
San José
California

with kindest regards of
A. DuBois

ESSAYS

ON

CONSERVATIVE MEDICINE.

ESSAYS

ON

CONSERVATIVE MEDICINE

AND KINDRED TOPICS.

BY

AUSTIN FLINT, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF MEDICINE, AND OF CLINICAL
MEDICINE, IN BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

LANE MEDICAL LIBRARY
6726
SAN FRANCISCO

PHILADELPHIA:
HENRY C. LEA.
1874.

D

Entered according to Act of Congress, in the year 1874,

BY HENRY C. LEA,

In the Office of the Librarian of Congress, at Washington, D. C.

ALL RIGHTS RESERVED.

PHILADELPHIA:

SHERMAN & CO., PRINTERS.

F61
1874

PREFACE.

THE essays on Conservative Medicine, forming the leading portion of this little volume, appeared some years since, at intervals of time, in different Medical Journals. This republication of them is a tardy compliance with suggestions made repeatedly by those on whose opinion in such a matter, more than on his own, the author would rely. The essays on kindred topics were written for different occasions, without any expectation of their being associated in a volume; and this fact will explain some repetitions which will be observed. The concluding essay having been written for a popular audience, its introduction may seem to require an apology. It is introduced under an impression that the study of Deity in disease may have novelty and interest for some medical readers.

NEW YORK, July, 1874.

We hear now comparatively little of terrible operations, and of that sort of heroism which is associated with bloody deeds. What would once have been considered as a degree of courage to be admired, is now stigmatized as rashness. It is an equivocal compliment to say of a practitioner that he is a bold surgeon. The change, it may be said, is in a measure due to the fact that the great number of new operations which have been introduced since the beginning of the present century leaves but a limited range for further explorations in that direction; but this explanation will go only a little way. The change is one of sentiment. The desire is to preserve the integrity of the body, to avoid mutilations, to incur the dangers of capital operations only when they are imperatively called for—in a word, conservatism has become the ruling principle in surgery. The most important of the more recent improvements in surgery exemplify the influence of this principle on the medical mind.

An analogous change, within the same period, has taken place in medical practice. Formerly, boldness was a distinction coveted by the medical, as well as by the surgical, practitioner. "Heroic practice" was a favorite expression, consisting in the employment of powerful remedies, or in pushing them to an enormous extent. The physician emulated the surgeon in daring. The change is not less marked in medicine than in surgery. We hear now oftener of diseases managed with little or no medication, than of cases illustrating the abuse of remedies. In the treatment of many affections it is not considered necessary to employ measures which, but a few years ago, it would have been considered culpable to withhold. The change, too, is here one of sentiment. We desire to preserve the vital forces, to avoid the perturbations and damaging effects of potential therapeutic agencies—in short, conservatism has become a leading principle in medicine as well as in surgery. The improved methods of managing a host of affections will be found to illustrate this fact.

Before proceeding further, let us inquire how the contrast between medical practice at the present moment and a quarter of a century ago, should affect our estimation of medicine. Is medicine disparaged by the changes which have actually taken place? It is not enough to answer this question in the negative. Mutations, when they denote progress, are, of course, desirable. In as far as the contrast shows improvement, medicine at the present moment is deserving of esteem, the more, as the changes are great. It redounds to the glory of medicine that it admits of illimitable progressive changes. In this fact lies the distinctive feature of legitimate medicine as contrasted with illegitimate systems of practice. But, some one may say, is there to be no stability in medicine, no traditional authority, and is reverence for the past to have no influence? If not, where is our ground of confidence in the practice of the present day? And is it not probable that at the end of another quarter of a century mutations will have occurred quite as great as those which have taken place during the last twenty-five years? These questions are to be met fairly and squarely; let us endeavor so to meet them.

Waiving the consideration of what constitutes perfectibility in the *ars medendi*, and whether it be obtainable or not, no one will assert that medicine is now, or ever has been, in a condition not to admit of indefinite improvement. Improvement in its practical applications and results is the great end of the labors devoted, now and hitherto, to the different departments of medical knowledge, viz., anatomy, physiology, animal chemistry, materia medica, pathology, and clinical medicine. We may assume that these labors, thus far, have not been profitless, and, accordingly, that practical medicine has improved. We may assume, also, that there is abundant encouragement to continue these labors, and, hence, that further improvement is to be expected—to what extent it is vain to speculate. It necessarily follows that stability in medicine is not to be counted upon; that the doctrines of to-day have no intrinsic claim to perpetuity; that because they are now in vogue is not a sufficient reason why they should not hereafter be modified or rejected, and that there is, to say the least, no ground to deny the possibility of the changes which are to take place hereafter being a whit less than those which have already taken place. What then? There are skeptics and scoffers with regard to medicine, and there are many persons who live and thrive by promoting popular distrust of it. It may seem to be giving aid and comfort to the enemies of medicine to concede that its past history abounds in errors, that present errors doubtless abound, leaving ample scope for future improvement. Be it so. We have nothing to do with skeptics, scoffers, and charlatans. We are not called upon to repel attacks prompted by ignorance, selfishness, and deceit. Yet it is desirable, with regard not only to the interests of the medical profession, but to the welfare of humanity, that medicine should hold its proper place in popular estimation. What, then, is the attitude to be taken as regards the just claims of medicine to public consideration and confidence? A body of men in every generation, from the time of Hippocrates to the present day, in all civilized countries, have conscientiously and industriously labored to acquire knowledge of diseases with reference to the relief of suffering and the prolongation of life. Under a host of difficulties and obstructions, many inherent in the pursuits themselves, and others proceeding from various extrinsic sources, the labors of physicians and their collaborators have continued and still continue. Now, granting that they have advanced slowly and often been led astray, where else can society ever seek for aid in the necessities of illness with a better prospect of success? Granting that they have failed, and still fail, in conferring all the benefit that is to be desired, and that, with the purest intentions, their efforts have been sometimes not only without avail, but hurtful, should the preponderating good be therefore overlooked, and is there any rational alternative but to accept the good and submit to the limitations and errors incident to existing knowledge? All that society can claim of medicine in any generation is, the capabilities of the medical science in that generation. All that society can claim of physicians is, that these capabilities shall be understood and judiciously applied. But we are opening up trains of thought which will lead us a long way from our subject, and we must abruptly return to the consideration of conservative medicine.

It is an interesting point of inquiry, whence came the influences leading to conservatism as a principle of medical practice? The answer to this inquiry would not be the same in all countries and sections. It must be admitted that in our country the earliest and fullest development of the principle was in New England. Our New England brethren are fond of dating a new order of medical ideas from the publication of an address, more than thirty years ago, by Jacob Bigelow, on the self-limited character of certain diseases. Not underrating the importance of that publication, the spirit of the oral teachings of James Jackson and John Ware has exerted on the medical mind of New England an influence which can only be appreciated by those who have experienced it. To those who have known experimentally the value of their teachings, it has been a source of deep regret that the influence of these admirable professors was not more widely diffused by means of larger contributions to medical literature. British conservatists attribute much to the writings of the late Dr. Forbes. Among the non-medical observers of the change in practice which has taken place, some have been persuaded that it is due to the disciples of Hahnemann, an idea too preposterous to need refutation. The truth is, we are not to look for the causes of the change exclusively in the views emanating from particular persons. It is rather a legitimate result of scientific researches in different directions. If we were to specify circumstances which have more especially been instrumental in leading to the principle of conservatism, we would mention, *first*, the abandonment of the attempt to found a system or theory of medicine after the decline and fall of Brunonianism and Broussaisism; and *second*, the study of diseases after the numerical method with reference to their natural history and laws.

Strange as it appears, the importance of determining by clinical observation the intrinsic tendencies of different diseases as the basis of therapeutics, seems to have been heretofore overlooked. Physicians have acted on the presumption that most diseases do not pursue a favorable course without treatment more or less efficient. This has been, to a still greater extent, the popular belief. The apparent proof of the success of the Hahnemannic treatment rests on this belief. What are the facts already ascertained with respect to the intrinsic tendencies of different diseases? We know that diseases in the management of which, but a few years ago, the physician would not dare to omit potent therapeutical measures, almost invariably end in recovery without any active treatment. Take, as examples, pneumonia limited to a single lobe, and acute pleurisy. It is sufficiently settled that these diseases involve very little danger in themselves, proving fatal only in consequence of complications. The practitioner, therefore, no longer feels obliged to employ bloodletting, mercurialization, cathartics, blisters, &c., in these diseases, with reference to the saving of life. The only question is, do patients pass through these diseases as well without as with such measures of treatment? Clinical observation, following up this inquiry, arrives at results which exemplify conservative medicine.

Our acquaintance with the natural history of the great majority of diseases is, as yet, very incomplete. Knowledge of the tendencies of diseases allowed to pursue their course without active treatment, is not readily acquired. We cannot conscientiously withhold remedies which we have reason to believe may prove useful. Cases are therefore to be slowly accumulated in which, from circumstances not under our control, diseases have been uninfluenced by therapeutic interference. This knowledge, it is evident, is the true point of departure for the study of the effects of remedies as regards the termination and duration of diseases. The information already obtained has rendered the use of powerful therapeutic agencies far less common than they were but a few years since. It remains to be seen hereafter what will be the further effect on medical practice of continued researches in this direction.

Conservative medicine assumes that remedial measures, according to their potency, must either do harm or good; that they can never be neither hurtful nor useful. Prior to the advent of conservatism, this important fact was not duly appreciated. Blows were levelled at diseases, but the patient was not enough considered. It did not enter sufficiently into the calculations of practitioners that if successive blows dealt at a disease were misdirected, the effect was not lost, but injury was inflicted in proportion to their force. Hence, it must needs follow that the sick man sometimes encountered, in addition to his malady, assaults not less real because well meant. In this respect, certainly, we have evidence of progress. We are satisfied that we do not err in saying that the most judicious practitioners of the present day accept the following maxims of that eminently conservative physician, Chomel: *first*, that we are not so much to treat diseases, as patients affected with disease; and *second*, that not to do harm, is no less an object of treatment than to do good.

In defining conservative medicine, we have seen that it expresses a characteristic of the improvements in medical practice during the last twenty-five years. Let us now direct our attention to illustrations afforded by some of the different classes of remedial measures. And, first of all, bloodletting suggests itself. How great the change as regards this remedy! Twenty-five years ago it was employed as if it were an innocuous remedy. Practitioners thought much more of the risk of not resorting to it when it was needed, than of the evils of its being needlessly resorted to. Hence, they often acted on the rule inculcated by a medical writer, namely, when in doubt use the lancet. How different the rule of treatment now! Few practitioners of the present day would resort to this remedy in any case in which its appropriateness seemed to them questionable. Why not? Because it has been ascertained to be a spoliative remedy. It causes a disproportionate loss of the corpuscular elements of the blood, which are slowly regenerated. These corpuscular elements are already deficient in many diseases. In short, anæmia and its pathological relations were very imperfectly understood a quarter of a century ago. It is clear now to every one that, if not indicated, bloodletting should never be employed. This simple statement explains, in a great measure, the comparative disuse of bloodletting. The great question now is, whether it is a remedy called for more or less frequently in the management of certain diseases, chiefly the acute inflammations. I do not propose to enter here into a discussion of this question. This much may be said: clinical observation, which is alone competent to settle the question, has shown that it is a remedy not called for so often nor to so great an extent in acute inflammations as was supposed but a few years ago. A single incidental remark with respect to bloodletting, and it is one which will apply to other remedies: In determining its influence for good or evil by means of clinical observation, it is not enough to take into account the ratio of recoveries, and the duration of cases of disease. Bloodletting may not increase the mortality from a disease, nor protract its continuance, and, yet, prove injurious. The injury may be manifest only in the slowness of convalescence and the impaired condition of the system after recovery.

Cathartics were prescribed a quarter of a century ago much more generally and to a much greater extent than at the present time. In fact, purgation was considered as rarely out of place, whatever might be the nature or seat of the disease. This harmonized with the notion that very many diseases originated in, and nearly all were liable to be perpetuated by, causes acting within the alimentary canal. Abernethy's views of the constitutional origin of local diseases were generally received and acted upon, and with him the constitution and the bowels were almost convertible terms, constitutional treatment consisting in the nightly blue pill and the morning black draught. The great Sir Astley Cooper quoted with approbation the quaint saying of an old Scotch doctor, who declared that fear of God and keeping the bowels open were the chief requisites of duty for safety in this world and the world to come! The importance of purgation became deeply rooted in popular sentiment. Cathartic pills or potions were considered indispensable in every household, and it would hardly express the frequency with which they were used, to say that family devotions were far less common. These were the days when, as Stokes remarks, more truly than chastely, doctors seemed to have always in their minds "a cathartic and a potful of fæces." In this day, when a change has taken place as respects the employment of purgatives, physicians suffer from the fact that it takes a long time to eradicate a firmly fixed popular notion.

Not only do we find it often embarrassing to reconcile patients to a different practice, but we are expected to inquire into, and carefully examine daily, by sight and smell, the excretions of patients, when we might otherwise consult our comfort (to say nothing of dignity) by dispensing with this exercise of the senses. The objects for cathartics, as now considered, are comparatively few, consisting chiefly in the removal of constipation, and their hydragogue operation in uræmia and dropsy. They are no longer given as a matter of course, without definite indications. As perturbatory and debilitating agents, they cannot but do harm if not required, and their frequent repetition conflicts with nutrition, and thereby with sustaining measures of treatment. The change, as respects this class of remedies, thus illustrates the principle of conservatism.

It is needless to remind the reader familiar with the practice current twenty-five years ago, of the frequency with which emetics were employed. Of morbid causes referred to the alimentary canal, a large share were supposed to exist in the *primæ viæ*—an expression then often used by writers and in common parlance. The same notion taken up by the public was conveyed by the homely expression "foulness of the stomach." Emetics were prescribed by physicians to remove saburral matters, and vomiting was desired by patients as a cleansing operation. Severe and prolonged vomiting by lobelia, in conjunction with the vapor bath, constituted the Thompsonian practice, which, in certain parts of our country, for several years, was considerably patronized. At the present time, emesis, irrespective of cases of poisoning and over-repletion, is rarely produced, excepting as incidental to the use of remedies not prescribed for that purpose, such as the nauseant sedatives, colchicum, veratrum viride, etc. What would be thought of a practitioner now who treated cases of phthisis with emetics repeated almost daily! Yet, within the memories of physicians of twenty-five years' standing, this practice has been advocated, and, to some extent, adopted. The progress of medical conservatism has led to the abandonment of emetics, as perturbatory and debilitating agents, excepting in the rare instances in which they subserve an explicit purpose.

The practice of the present time presents a striking contrast with that twenty-five years ago, as regards the use of counter-irritant applications. The physician whose professional career has already extended over that period, is sometimes reminded of the severe measures then in vogue, by the exhibition of indelible scars on the bodies of his old patients. He is not likely now to contemplate these traces of his former vigorous practice with lively gratification. Blisters, sometimes applied successively over the same space, and not diminutive in size, tartar emetic ointment and plasters, issues, the moxa, etc., were considered as among the most efficient of the means of influencing the cure of a host of local affections. How much less frequently are they now used, and, when counter-irritation is deemed advisable, how much milder are the applications chosen! Physicians were strongly impressed with the belief that local affections were often removed by revulsion. They accepted the doctrine of Hunter, that two diseases rarely concur, and hence, that an artificial disease is likely to effect a cure by a process of displacement. Not only has this doctrine been disproved by pathological researches, but these have shown a large number of the local diseases formerly regarded as primary, to be the secondary or tertiary effects of morbid conditions then unknown. Bright's disease had not been discovered, and its pathological consequences were, of course, unintelligible. In those days solidism prevailed, and hæmatology has been since created. Physicians made no account of blood-poisons, and the old humoral notions of coction and fermentation had not been revived under the modern but equally indefinite garb of catalysis. Farr had not invented the name Zymosis, a name expressive of our ignorance rather than conveying any precise knowledge, but, nevertheless, significant of a wide and most important leap from the doctrine of solidism; or, in other words, of a passage backward, guided by the light of modern science, to humoralism, which, as Rokitansky remarks, is simply a requisition of common sense. This change in pathological views, in conjunction with clinical observation, has led physicians to distrust, more and more, the value of counter-irritant applications, and, at all events, to conclude that severe revulsive measures are rarely called for; hence, the change in practice is in conformity to the principle of conservatism.

The contrast as regards the use of mercury affords a signal instance of progressive change. The remarkable efficacy of this remedy in certain affections naturally led to the expectation of its utility in many diseases. Mercurialization being a disease, it accorded with the current belief of the incompatibility of different affections, to suppose that it displaced other diseases. It was considered as *par excellence* an *alterative* remedy; and what a latitude for imagined results was afforded by that title! Moreover, its supposed special action on the liver accorded with the notion that the secretion of bile had much to do with morbid phenomena. The relief or prevention of portal congestion was incidental to its hepatic effects. It lessened exudations; it promoted the absorption of morbid products; it altered the secretions; it dispelled local engorgements, and, by exciting stomatitis, it acted by way of revulsion. Waiving here, as in the other instances, discussion of the actual value of this remedy, the extravagance of the views formerly entertained is now sufficiently evident. The statements of those who have made war upon this article of the materia medica, and the popular prejudices thereby produced, are equally, or still more, extravagant; but it is a remedy potent for harm when inappropriate, as it is powerful for good when indicated; and, therefore, the great change that has taken place as regards its use exemplifies conservatism.

These examples are sufficient to show how conservative medicine is illustrated by recent improvements as regards the employment of particular therapeutic measures. They furnish evidence of immense progress in practical medicine. Let not this statement be misunderstood. The improvements which have been noticed consist in the restricted use of bloodletting, cathartics, emetics, counter-irritants, and mercurials. Does the restricted use of these measures detract from their real therapeutic value? Not at all. Medicine has, by no means, repudiated them. She employs them with better judgment and discrimination; thus, availing herself of the good they can accomplish, she escapes the evils arising from their injudicious and indiscriminate use.

If we look at the progress of medicine during the last quarter of a century from another point of view, we find additional examples of conservatism. Regarding it exclusively from the point of view already taken, it appears that, in proportion as the practice of medicine has improved, reliance on certain active or heroic measures of treatment has diminished. This is true, but it is not the whole truth. Some measures are employed with much more freedom now than a few years ago. The use of opium and alcoholic stimulants, in certain diseases, affords the most striking illustrations of this truth. These instances also exemplify the principle of conservatism. Opium and alcohol, in excessive doses, occasion immediate disorder, of more or less gravity, and may destroy life. But given so as not to incur any risk of these effects, they do not conflict with conservatism, because their operation is transient, and, unless their use be continued, they do not leave behind them damaging effects. Given in quantities which are comfortably borne, they certainly do not impair the vital forces by perturbation, by loss of fluids, by affecting the constitution of the blood, or by inducing local changes, as do the measures previously noticed. This statement, of course, has nothing to do with the ulterior consequences, moral and physical, of intemperance or opium-eating. Here, too, as in other instances, discussion of the *modus operandi* of remedies is waived. Most physicians will agree in the statement that, when indicated as remedies, opium and alcohol sustain the vital forces. In this respect they are positively conservative. But a point of distinction is, when not indicated, if given within certain limits, and not continued, they are neither spoliative, exhausting, disturbing, nor disorganizing, as are various other measures, and, therefore, not, like the latter, even then, antagonistical to conservative medicine.

The contrast between the practice of medicine now and twenty-five years ago is not less marked, as regards the use of opium and alcohol, than as regards the restricted employment of other measures. Let the practitioner, who has seen service for a quarter of a century, consider what a responsibility he would once have taken in treating cases of pneumonia with brandy and opium, to say nothing of the continued fevers. The wonderful tolerance of these remedies in certain cases of disease is a recent discovery. Let the same practitioner consider whether he would once have ventured on a hundred grains or more of opium per diem in a case of peritonitis, or grain doses of the sulphate of morphia hourly, continued for several days, in a case of dysentery. Let him consider whether, at the commencement of his career, with the fulminations of Broussais on incendiary practice resounding in his ears, he ever dreamed of the propriety of giving a quart of spirit daily to fever patients, and of finding the frequency of the pulse diminished, and the mind become more clear under this heavy stimulation!

If we turn from remedial measures to dietetics, we find that the improvement which has taken place in practice contributes to the illustration of conservative medicine. In fact, conservatism is, perhaps, not less conspicuous in the contrast as respects the diet of the sick than in any other point of view. In cases of fever, and all acute diseases, twenty-five years ago, it was generally deemed an essential part of the treatment to withhold alimentary supplies. It was a frequent saying to patients who craved food, that to allow it would be to nourish the disease. In chronic affections, too, the diet was usually much restricted. It was believed that a large majority of diseases were attributable, directly, to dietetic imprudences, and that the over-ingestion of food, during the progress of diseases, was, of all indiscretions, the most prolific of evil. Physicians seemed to lose sight of the plain fact that the vital powers must languish in proportion as the alimentary supplies fall below the wants of the system, and that death may be produced by starvation in disease as well as in health. At the present time, a nutritious diet is considered as highly important in the management of fevers, as well as in diseases which tend to destroy life by exhaustion, and most physicians appreciate the importance of keeping the body well nourished in chronic affections.

Incidentally a point for remark is here suggested. Twenty-five years ago disorders of digestion, grouped under the name dyspepsia, were extremely frequent. Dyspepsia was the popular malady of the day. The number of dyspeptics, of late years, has greatly diminished. The malady is comparatively infrequent. Why is this? I believe it to be explained, in a great measure, by the fact that in the matter of eating, instinct has regained its rightful supremacy. We do not hear so much now, as then, of the liabilities to dietetic errors. Physicians are not so ready to attribute diseases to some imprudence at the table. The subject is not brought to the minds of the people by means of conversation, popular books on diet, public lectures and sermons. The healthy man no longer sits down to dinner with fear and trembling, lest he should eat too much, or indulge in improper articles of food. There are fewer patients who hold to the fanatical notion, that moral and physical health requires the demand of the system for food in sufficient quantity and variety, as expressed by hunger and appetite, to be resisted; and that the welfare of body and mind is promoted by living on a poor and insufficient diet. We rarely, nowadays, hear the injunction, which was once impressed upon all who would preserve health, to adopt the habit of always rising from the table hungry. Nature and common sense have triumphed over these absurd ideas, and, among other advantages, dyspeptic ailments, which formerly tormented so many persons, have wonderfully diminished.

Recurring to the definition of conservatism in medicine, it suffices to say that it means the preservation of the vital forces. It is a principle in medical practice, covering everything which prevents impairment of, or tends to develop and sustain, the powers of life. The terms "vital forces" and "powers of life," although they are not readily explained, have a practical meaning which is well enough understood, and it is unnecessary to enter into an explanation of them. It has been the object, in the foregoing pages, to give an exposition of conservative medicine, and to show that conservatism, in the sense in which the term is now used, is a distinguishing feature of medical practice at the present time, as contrasted with the practice which prevailed twenty-five years ago. The development and adoption of this principle have been seen to be results of the progress of medical knowledge, and the circumstances which seem especially to mark the beginning of the changes illustrating the principle are, abandonment of attempts to reduce the practice of medicine to a system, after the failure of the latest, namely, Broussaisism, and the study of the natural history of diseases, as inaugurated by Louis. It is by no means, however, intended to ignore the fact that the cultivation of all the branches of medical knowledge has powerfully co-operated to the same end. The changes which have taken place during the last quarter of a century have not been due to a prior recognition of the principle of conservatism, but now that the changes have occurred, we find conservatism to be common alike to all, binding them together, and constituting their most striking characteristic. Having reached the principle thus analytically, are we not bound to recognize it as a fixed principle of medical practice, and one possessing great practical importance? Assuming it to be such, the remainder of this article will be devoted to its applications in the management of different forms of disease. And, first, let us consider the application of conservatism to the treatment of patients with inflammatory affections.

Theoretical views led to the measures called *antiphlogistic* in cases of inflammation. These measures, consisting of general and local bloodlettings, cathartics, and rigid or restricted diet, were considered as antagonizing the state of inflammation, not unfrequently arresting its progress, and, when not successful in this end, diminishing its severity, limiting its morbid effects, and abridging its duration. As already remarked, the injury which these measures are capable of doing was overlooked, and, on the other hand, all will admit that their efficacy, in effecting the objects just stated, was greatly overestimated. Clinical experience has shown that we cannot rely upon these measures to arrest the progress of inflammation. Admitting the possibility or probability of success in a small proportion of cases, we are not justified in exposing patients to the injury produced if these measures do not succeed, when the chances are few that they will prove successful. This statement expresses a rule of conservatism applicable to all potent measures employed in any disease as abortive measures of treatment. Measures not impairing the vital forces are allowable, even when the probability of success is small. Opium, for example, is admissible as an abortive remedy when bloodletting is clearly inadmissible. But measures which, if not successful, will do harm, are only to be resorted to when the chances of success preponderate over those of failure. Conservatism, therefore, does not justify the employment of the antiphlogistic measures of treatment with a view to the arrest of inflammation, without taking the ground that they invariably fail.

Clinical experience has rendered it doubtful whether the antiphlogistic treatment exerts much effect on either the intensity of inflammation, its results, or its duration. Conservatism, therefore, dictates a careful weighing of the evils of the treatment against the chances of its usefulness as regards these objects.

It is not settled by experience that this treatment, carried to a greater or less extent, is always in no measure efficacious. Hence, there is room for difference of opinion, and the practice of different physicians will differ. The discriminating practitioner, who, although satisfied of the evils of the indiscriminate employment of antiphlogistic measures, believes in their utility, if judiciously employed, will be guided in withholding or resorting to them, by the circumstances belonging to individual cases. And here it is that his practical knowledge, judgment, and tact are brought to bear on the management of inflammatory affections. Conservatism will dictate to such a practitioner not to employ bloodletting, etc., when the inflammatory affection, from its seat and degree of intensity, involves no danger, and when there is reason to suppose that it may pass through its course favorably, without active interference. Conservatism will dictate the same policy when all the local results to be expected from the progress of inflammation have already taken place, and the restorative processes only remain—a condition illustrated by the second stage of pneumonia, when all the exudation that is to occur has occurred, and the recovery involves only the absorption of the morbid deposit. Conservatism will dictate the same line of conduct in all cases of disease in which more danger is to be expected from failure of the powers of life, than from lesions incident to the local affection.

The value of therapeutic agencies is, of course, to be determined by experience. Developments in the progress of pathology, however, contribute to our knowledge of therapeutics, not only by giving direction to clinical observation, but by harmonizing with the conclusions drawn from the latter. It is interesting to note the consistency of the practical views now generally held as regards antiphlogistic measures, with late developments respecting the origin of certain inflammations. Inflammations not traumatic were formerly considered, and are now often called spontaneous. We may use this term conventionally as distinguishing a local disease not referable to any obvious local cause, but, strictly, it is an absurdity to say that any disease is spontaneous. Every local affection must involve an adequate morbific agency acting on the part affected. It is true that our present knowledge does not enable us generally to appreciate the nature, sources, and the *modus agendi* of the proximate causes of inflammatory affections, but we have acquired, of late years, some information important in itself as a basis for analogical reasoning. Clinical observation has shown that the accumulation of urea in the blood is apt to lead to inflammation of serous structures. This we know, and it is a rational supposition that urea (or the products of its decomposition) induces inflammation, by acting directly on these structures. There are sufficient grounds for believing that the local inflammations occurring in gout and rheumatism are due to the local action of a *materies morbi* in the blood, perhaps the uric acid in the former, and the lactic acid in the latter of these diseases. Reasoning by analogy we may expect with considerable confidence that future researches will show the so-called spontaneous inflammations generally to be produced in a similar manner. And with this view of their production, we should rationally expect great results, not so much from the antiphlogistic treatment as from measures addressed to the morbid conditions of the blood which underlie the local manifestations of disease. To ascertain these morbid conditions in different diseases, to prevent the introduction or accumulation of morbific material in the blood, to neutralize the poisonous properties of this material by causing the formation of innocuous combinations, to arrest the organico-chemical changes which its presence induces (catalysis), or to eliminate it through the emanations of the body,—these are the great objects of therapeutics at the present day, harmonizing with the late revelations of pathology. Without stopping to inquire how far these objects have been obtained, it is to be remarked that they are obviously conservative, involving, as they do, protection against internal agencies inimical to life and health.

Conservative medicine thus dictates, in inflammatory affections, proper discrimination in the employment of the so-called antiphlogistic measures, which, if failing to exert a controlling influence, are necessarily hurtful, and, it may be, destructive, by impairing the vital forces. It also dictates the judicious use of remedies addressed to the internal causative conditions pertaining to the blood, so far as our present knowledge extends into these most important provinces of pathology and therapeutics. But this is not all. Conservatism often demands that the vital powers shall be sustained. Sustaining measures of treatment, practically considered, consist of tonics, alcoholic stimulants, and nutritious diet. We will not inquire as to the rationale of the operation of these measures. Suffice it to say, clinical experience shows abundantly that they lessen the degree to which the vital forces would otherwise be impaired by disease, and may prevent a fatal termination of disease by exhaustion. I have already admitted that the phrase "powers" or "forces of life" is metaphorical. Life is not an entity. But with a fair understanding that this personification of a combination of conditions, as yet but imperfectly understood, is merely for convenience, it is unobjectionable. The powers or forces of life enable the system to bear up under disease, to resist it successfully, and recover from it. On the other hand, we may say that disease destroys by overcoming the powers of life, whenever death takes place by asthenia or exhaustion. Every sagacious practitioner knows that certain symptoms, no matter with what disease they are associated, denote failure of the vital powers, or inability to resist disease. He estimates the amount of danger by these symptoms, among which those referable to the circulation are especially important. He often bases his prognosis far more on these symptoms than on the nature and extent of the local affection. Every practitioner knows that an inflammation, the same in all respects, so far as the local affection is concerned, in different persons, affects the vital forces differently. Take, for example, pneumonia, extending over the same space, and inducing an equal amount of changes, which physical exploration enables us to determine with accuracy: one patient manifests little disturbance of the system, and no symptoms denoting danger, while another patient will succumb to the disease. Every practitioner knows that some persons, who, in health, present no evidence of a lack of vigor, have very little ability to resist severe disease. They are quickly destroyed by affections which other persons readily endure, and endure perhaps without much inconvenience. Of course, these facts are explicable, but not with our present knowledge, and, until explained, it answers to refer them to differences as regards the vital powers or forces. They are facts of not a little practical importance.

Conservatism dictates sustaining treatment in any inflammatory affection whenever the symptoms denote failure of the vital powers, whether the period be early or late in the course of the affection. This treatment is to be pursued vigorously in proportion to the rapidity of the failure and the amount already taken place. It is important in all dangerous affections to watch for the first evidence of failure, and to lose no time in resorting to supporting measures. Such is the influence of traditional ideas, that these measures are frequently delayed from a timidity which experience is sure to remove. It is far wiser to enter on the use of tonics, stimulants, and a nutritious diet too early, or when not required, than to incur risk of delay, or their omission when required. In the one case, the liability of harm is small, but in the latter, lost time, which cannot be regained, may have been of immense importance to the patient. So far from incurring risk of damage from delay, the wise practitioner will anticipate the indications for support, and forestall the failure which he knows would otherwise occur. Physicians, however devoted to the antiphlogistic treatment of inflammations, have generally recognized the importance of supporting measures to "obviate tendency to death." When the flame of life is reduced to a glimmer, they would prevent it, if possible, from going out. Does not common sense teach that measures which may prove serviceable under these circumstances, would have proved much more so when the danger was less imminent? Is it not better policy to endeavor to keep the lamp of life burning brightly, than to depend on efforts to restore the flame when nearly extinguished? In cases involving danger to life, the importance of sustaining treatment is to be measured by these questions: Is the chief danger due to failure of the vital powers, and how great is the danger from this source? In cases not involving danger to life, the importance of support has reference to the duration of the disease, the rapidity of convalescence, and the condition of the recovery. The advantages derived from the proper application of conservatism, as regards sustaining treatment, in all inflammations, by no means consist exclusively in a reduced rate of mortality, but also in a speedy and rapid convalescence, and in the completeness of the restoration to health.

These remarks have had reference more especially to acute inflammations. Chronic inflammation affecting an important part may continue for a greater or less period, and recovery finally be complete; but during its continuance the powers of life are more or less impaired.

It may destroy life by leading to incurable lesions, or by its protracted duration, in either case death usually taking place by slow asthenia. Under all circumstances, the affection is less likely to be prolonged, serious changes of structure are less likely to take place, and a fatal termination is postponed in proportion as the vital powers are preserved. Conservatism, therefore, dictates not measures to reduce, but those which sustain the powers of life in chronic inflammations. It dictates measures to develop appetite, and improve the digestive processes, abundant nutritive supplies, and, in short, the remedies and hygienic means which invigorate and strengthen the body. The "building up" treatment, as it is significantly called, has contributed largely to the more successful management of chronic affections since the days of Broussaisism. Some of the most striking examples of the efficacy of this treatment which I have seen have been cases of chronic pleurisy, in which speedy and progressive improvement followed directly the substitution of this treatment for measures opposed to the principle of conservatism. These examples are the more satisfactory because, by means of physical signs, the improvement within the chest was accurately determined at the same time that the local and general symptoms denoted a favorable change. Certain cutaneous inflammations, and cases of ophthalmia, the parts in these affections being open to inspection, also afford examples not less striking.

Conservatism has been practically more fully applied to the management of essential fevers than of inflammatory affections. Since nearly all pathologists have admitted the essentiality of fever, and since physicians have ceased to agree with Southwood Smith in regarding inflammation as an almost constant concomitant and the chief source of danger in fever, the importance of preserving and sustaining the powers of life has been more and more appreciated, and, at the present moment, with the most intelligent practitioners, these are the leading objects in the treatment. In this remark I refer especially to fevers having a self-limited career, and not arrested by abortive measures. The periodical fevers are controllable by remedies having a special efficacy. These remedies are conservative, acting in an imperceptible manner, and, given within proper limits, producing no destructive or injurious effects even if not indicated. It is a curious fact that the fevers which we are able to arrest with great certainty, *i. e.*, the periodical fevers, continue indefinitely if not arrested, and return, sooner or later, and more or less frequently, in the majority of cases, whereas the fevers which we cannot arrest with any certainty, if at all, *i. e.*, the continued fevers, the eruptive, and yellow fever, have a fixed duration, and, as a rule, are experienced only once. It is not without the bounds of a reasonable expectation that the means of arresting the last-named fevers will hereafter be discovered. Reasoning by analogy, and from the pathological views now generally entertained, the means for this end must act by neutralizing a morbid material in the blood, or effecting its elimination, acting, therefore, in accordance with the principle of conservatism.

Tonic remedies, alcoholic stimulants, and nutritious diet are the measures for maintaining the vital forces during the course of the essential fevers. The importance of these measures is now so generally admitted as hardly to require argument or advocacy. The only questions for discussion relate to circumstances indicating their employment, the extent to which they are to be carried, and various details connected with their use. The discussion of these questions does not fall within the scope of this article. I may be indulged, however, in a few remarks on some interesting points connected with the subject.

One of these is the wonderful tolerance of alcoholic stimulants in certain cases of fever. Examples have been of late so often repeated, and are so generally familiar, that they need not be cited. How much at variance are the effects of pints of spirit, given daily, with those produced in health! And how fully does this fact, as well as analogous facts relating to the action of opium and other remedies, illustrate the liability to error in judging of the operation of therapeutic measures in disease from experimental observations in healthy persons! How surprised, but a few years ago, would have been the therapeutist if told that the action of alcohol, under certain morbid conditions, is in fact sedative; in other words, that, in certain cases of typhus and typhoid fever, two or three ounces of spirit given hourly may lessen the frequency of the pulse, diminish the heat of skin, and render the mind more clear! But the past history of medicine shows a tendency to push prevailing ideas to an extreme, against which the prudent physician should endeavor to guard himself. There is danger now of carrying the use of alcohol to an injudicious and dangerous extent. The principle of conservatism should be the guide. The object is to sustain the vital forces. The tolerance is in proportion to the need of this sustaining agent. If it be used excessively in all cases, without discrimination, it will sometimes do harm, and life may be destroyed by alcoholic poisoning. We have already seen that, within certain limits, alcohol is eminently a conservative remedy, because even when not indicated, it is not destructive, and its operation is transient, but beyond certain limits its effects may be poisonous, provided it does not fulfil indications showing that the system is tolerant of quantities which would be dangerous in health. Let the indications, then, in individual cases, be carefully observed, and let the effects be carefully noticed, so as not to violate, but conform to the rule of conservatism.

Some interesting points are connected with the dietetic management in cases of fever. In perfect health the wants of the system for alimentary supplies are expressed by hunger and appetite. Common observation, however, teaches us that these sensations are not essential as prerequisites to digestion and nutrition. Almost every one has experienced a state, certainly abnormal but not dependent on any well-defined disease, and not interfering with the usual habits of mental and physical activity, in which food is taken habitually for a greater or less period without hunger or appetite, and nevertheless properly assimilated. Intense mental preoccupation and persisting depressing emotions may involve such a state. During the career of fevers, usually, hunger and appetite are wanting, but it is not to be inferred therefrom that the ability to appropriate nutriment is lost. Some have reasoned that the absence of the desire for food is always evidence of its not being needed, and a comparison has been made between the morbid condition, in this regard, in the essential fevers, and the natural state of hibernation. But the analogy holds good only as respects the disinclination for food. In hibernation, the respirations, the heart's action, muscular movements, and the functional exercise of all the organs, are reduced to the lowest point compatible with the preservation of life. In fever, the respirations are far oftener increased than diminished in frequency, and more oxygen enters the system than in health; the heart beats with unwonted frequency, muscular action is not wanting, and in the more frequent respiratory movements it is above the healthy standard; the mental faculties are sometimes morbidly active, and, from the absence of sleep, often more continuously so than in health; calorification is increased, and various functions of the body manifest disordered activity. It seems sufficiently clear that no practical inferences are to be drawn from a comparison between the arrest of hunger and appetite in fever, and the suspension of these sensations in hibernation. In hibernation the system has no need for alimentary supplies, and hence, there is no physiological expression of the want of them. In fever the morbid conditions prevent the feeling of this want, although the need of alimentary supplies continues.

The correctness of the statement just made rests on clinical observation. Patients with fever, taking food without inclination and even with repugnance, retain it, and no disturbance is produced by its ingestion; the fecal evacuations may present a normal appearance, and, in some cases in which a nutritious diet has been entered upon after the disease has existed for some time, there is an evident increase of muscular strength, although the career of the fever continues. These are clinical facts. And the conclusion is, digestion and nutrition are not incompatible with the state of fever, although hunger and appetite may be wanting. The faculty of perceiving these sensations is impaired or lost in consequence of the morbid condition of the nervous system, and hence, they cease for the time to express the demands of the system. The perceptions are often so blunted that the mind takes no cognizance of other wants of the system. The urine is allowed to accumulate in the bladder, and, with the tongue desiccated, the patient manifests no desire for drink. Fatigue from lying continuously in the same position is not complained of. Local complications of the disease are not accompanied by pain. Under these circumstances, it is consistent that the sensations of hunger and appetite should not be experienced. The perceptive faculties, however, sometimes are not so much impaired as they appear to be. Desires and feelings may not be manifested from an extreme reluctance to make any exertion. Thus, patients not unfrequently drink with avidity when the cup is brought to their lips, who make no complaint of thirst; and in some cases, food, when presented, is also taken with relish.

In sustaining the powers of life in fevers, then (and also in certain other diseases), the physician is not to be restrained by the absence of hunger and appetite. He is to act with reference to the wants of the system by endeavoring to secure the ingestion of food, concentrated, containing the necessary variety of alimentary principles, and ample in quantity. Here, too, as with regard to alcoholic stimulants, it is far better to begin earlier than is needed, than run any risk of delay, and to give more aliment than is required than not enough. An appreciation of the importance of alimentation in fevers is among the most important of the recent improvements in practice which exemplify the spirit of conservatism. But in all acute diseases, whenever the chief end of treatment is to support the powers of life, a nutritious diet is essentially important, and the same rules with regard to dietetic management are alike applicable.

It will suffice to notice the application of conservatism to those chronic affections collectively which destroy by gradual inroads upon the powers of life. In this class are grouped such affections as carcinoma, tuberculosis, chronic dysentery, cirrhosis, and Bright's disease. It is sufficiently clear that, with a view to the prolongation of life, when recovery is not expected, the great object is to retard, as much as possible, the failure of the vital forces. If we cannot "build up," we may do much to delay the progress of destruction. Evident as this is, it is not sufficiently appreciated by all practitioners.

Patients affected with incurable diseases are too often abandoned to merely palliative remedies, the fatal issue being considered as merely a question of time, and, therefore, not of much importance. This question of time, however, may be highly important to patients and their friends. To aid in the cure of diseases is, undoubtedly, the first aim of the physician; and next to this, when a cure is not to be effected, comes the prolongation of life, with health more or less impaired. The last of the grand objects of practice are palliation and euthanasia.

In the management of any incurable affection, conservatism dictates the measures which, in general terms, contribute to keep the body in the best possible condition compatible with the continuance or progress of the disease. In this way not only the inroads of the disease on the powers of life but the destructive lesions in the parts affected, are often stayed. It may be assumed to be a rule in pathology that a local affection involving structural changes is less likely to progress with rapidity, the closer the approximation to health in all other respects. The practice which conservatism dictates in such cases is in accordance with this rule. An incurable lesion is sometimes so completely held in abeyance, and the system is rendered so tolerant of its continuance, that life may be preserved indefinitely, although a vital organ be affected. We meet with cases in which the formations of tubercle and carcinoma remain for a long period non-progressive and nearly innocuous. The conservative practice, moreover, favors those retrogressive changes by which even the diseases just named may eventuate in cure.

To consider the measures for keeping the body in the best possible condition, would be to enter on a large but immensely important domain of practical medicine. I must content myself with saying that they consist, first, of a nutritious diet; next, of remedies to strengthen and invigorate; and last, of hygienic influences directed to the same end. The hygienic influences comprise exercise and everything relating to regimen, change of climate, mental diversion and encouragement—in short, whatever can be brought to bear favorably upon the welfare and vigor of the system. The hygienic is certainly not inferior in importance to the medicinal treatment, and here it is that the judgment and tact of the successful practitioner are especially brought into requisition.

A comparison of cases of pulmonary tuberculosis now and twenty-five years ago, illustrates the importance of the practical views just presented. The management of this disease twenty-five years ago was certainly not in accordance with the principle of conservatism. The measures employed, medicinal and hygienic, were, indeed, directly opposed to this principle. The antiphlogistic system of treatment was often adopted, under the belief that inflammation was the most important element of the local affection. Bloodletting, cathartics, mercurialization, severe counter-irritation, were considered as remedial, and to these were conjoined low diet and confinement within doors. Now, pulmonary tuberculosis is not cured in the majority of cases, although it is not incurable, and there is reason to believe that the proportion of cures is considerably larger than under the treatment just referred to. But, directing attention to the incurable cases, under the plan of treatment generally pursued at the present time, which is eminently conservative, how striking the contrast! Formerly, the instances of rapid progress of the disease were more numerous, and it almost invariably advanced with a steady march, rarely occupying many months in completing its fatal career. Patients were usually confined to the bed for weeks before death, lingering on the borders of the grave, suffering from extreme debility, bed-sores, aphthæ, and colliquative diarrhœa. It was difficult to conceive of a picture more distressing and repulsive than that of an unfortunate being in the last stage of consumption. Conservatism has done much toward ameliorating the condition of consumptives, even when it is hopeless as regards recovery. Cases of so-called galloping consumption are less frequent. Life is not unfrequently prolonged and made comparatively comfortable for years. It is not uncommon to meet with instances of a considerable tuberculous affection remaining quiescent or progressing very slowly, and the patient able to engage in the active occupations and enjoyments of life. Even when the disease is progressing to a fatal termination, the strength is usually so far preserved that a bedridden consumptive is now rarely seen, and it is not uncommon for patients to be out of doors almost up to the hour of their death. I appeal to those whose medical experience has extended over a quarter of a century for the truthfulness of this comparison.

In concluding these fragmentary remarks, let it be borne in mind that, important as is conservatism in medical practice, it is by no means inconsistent with the employment of efficient therapeutic agencies in the management of diseases. The conservative surgeon does not hesitate to use the knife and dismember the body, when convinced that thereby he may save life. So the conservative physician resorts without hesitation to his potential remedies—not less potent for good or evil than the scalpel—whenever he sees clearly that they will contribute to the safety and welfare of the patient.

II.

CONSERVATIVE MEDICINE AS APPLIED TO THERAPEUTICS.[1]

AN explanation of the term *Conservative Medicine* may be required for many of the readers of this journal. The term should be at once explained, because the reader may suspect a meaning quite different from the sense in which it is to be here employed. It is not intended by this term to refer to a conservatism which adheres to principles and rules of practice on account of antiquity, authority, or usage. The conservatism meant is not an adherence to doctrines which have been or are now held. It is not that kind of conservatism which protests against any changes, and resists all innovations. The definition of the term will be found to involve a signification quite the reverse of all this.

In an essay written for another journal, the writer has adopted this term as an analogue of the term *Conservative Surgery*. The conservative surgeon, before resorting to capital operations, carefully considers the situation of patients, and the danger to life which the operations involve; and he regards the preservation of the integrity of the body as a higher success than the most skilful mutilation. In like manner, the conservative physician considers fully the effects of the potent agencies employed as remedies, appreciating the fact that, if not remedial, these agencies are necessarily injurious, and may prove destructive; and in the management of diseases he always accords due importance to the preservation of the powers of life. As the true surgeon is not the mere operator, unmindful of the duty of preserving and restoring parts, who uses the knife without regarding the condition of the patient; so the true physician is not the routine practitioner, prescribing, with an unsparing hand, active therapeutical measures without any clear apprehension of the objects to be fulfilled, making no allowance for the natural tendency of diseases toward recovery, and disregarding the state of the system.

---

[1] Published in the American Journal of Medical Sciences.

In the former essay, the writer attempted to show that the grand improvements in practical medicine which have been steadily going on for the last quarter of a century, are characterized by conservatism as just defined. This conservatism is shown by a greater discrimination in the use of spoliative, perturbatory, and debilitating measures, such as bloodletting, mercurialization, emetics, cathartics, and severe counter-irritation. It is shown by an increased use of remedies which are potent without damaging the organism, such as opium and other sedatives. It is shown by a reluctance to interfere actively with the course of diseases which have a self-limited career. It is shown by a greater reliance on hygienic measures. It is shown by more attention to alimentation, and by the earlier and more efficient employment of supporting treatment in all affections which tend to destroy life by asthenia. The term *conservative medicine* thus expresses the great characteristic of medical practice at the present moment; and it is so, not from the authority of any master mind, or the influence of any dominant theory, but purely because it is incidental to the advancement of our knowledge of pathological conditions, of the action of remedies, and of the natural history of diseases. And the term may also be considered as expressing a great principle, which, to a certain extent, should govern the views and conduct of the physician. Regarding it in the latter point of view, I shall present in this essay some considerations connected with the application of the principle of conservatism to therapeutics.

Medicus Naturæ minister non magister est. It is interesting to note the principle of conservatism as manifested by nature in the history of diseases. Waiving all questions concerning the existence and sources of morbid conditions, we see exemplifications of conservatism on every side in pathological laws, and this principle becomes more and more conspicuous in proportion as we advance in our knowledge of the natural history of diseases. The well-established fact with regard to many diseases, that they tend intrinsically to recovery, and not to death, as formerly supposed, shows the conservatism of nature. The recovery, sometimes even without medication, from diseases which are generally destructive, exemplifies the principle. This is certainly true of pulmonary tuberculosis. The principle is exemplified in the situation of the great majority of local affections which are not traumatic, and therefore said to be spontaneous; the parts oftenest affected being not so closely connected with functions necessary to life as the parts which generally escape. Thus, the great majority of acute inflammations are seated in the skin, mucous structures, and certain of the serous membranes. On the other hand, internal organs, the functional exercise of which is more immediately concerned in vital operations, such as the stomach, small intestines, pancreas, liver, kidneys, are comparatively not often acutely inflamed. The principle is seen in the spontaneous removal of morbid products from different parts of the body, and in the disposal, by elimination or otherwise, of the *materies morbi* which there is reason to believe give rise to a host of local affections.

The study of the events belonging to the natural progress of individual diseases discloses abundant illustrations of the principle of conservatism. The limitation of inflammation to a particular structure furnishes striking examples. For instance, how rare is it that the inflammation in tonsillitis or pharyngitis extends into the larynx! Were it not for this conservative provision, how serious would be these frequent affections of the throat in view of the liability of extensions to the windpipe, and the danger attendant on this complication! Again, what a vast difference is there, in severity of symptoms and danger to life, between ordinary and capillary bronchitis; and how rare the latter, notwithstanding the frequency of the former! We can only explain this fact by stating that the inflammation extends from the larger to the smaller bronchial tubes as an exception to a law of the disease. The physician, by attempting to place himself in the false position of the master of nature, may thwart her conservative provisions much to the detriment of his patients. A striking illustration of this fact is afforded by the practice heretofore inculcated in cases of hypertrophy of the heart. We have been taught to pursue active measures, and, by some, measures of a very severe character, with a view to prevent and diminish hypertrophy of the heart. Now, it is plain that this form of enlargement is a most important conservative provision of nature to obviate evils which would otherwise arise from the valvular lesions preceding the development of cardiac hypertrophy in the vast majority of cases. The physician is the servant of nature when he does not interfere with, if, indeed, he do not endeavor to foster, this abnormal condition.

A splendid theme for an essay would be *the principle of conservatism as exemplified in the natural history of diseases.* I must here content myself with this brief reference to it.

Directing attention to *conservative medicine as applied to therapeutics*, the subject naturally presents itself in a twofold aspect, viz.: *First*, as regards the therapeutical indications derived from our knowledge of the pathological character, condition, etc., of diseases; and, *Second*, as regards the general object of remedial measures. I shall consider the subject under these two heads; but, before entering upon them, there are certain considerations which are suggested by the inquiry, What are some of the general characteristics of conservative medicine? Or, to vary the question, What are the more prominent of the traits which distinguish the conservative physician? In answer to this question, I shall offer a series of aphorisms which will lead the way to subsequent inquiries relating to therapeutical indications and objects.

1. The conservative physician endeavors to protect the system, on the one hand, against disease; and, on the other hand, against injurious medication. He therefore employs potent therapeutical measures only with a view to well-defined objects which are in accordance with clear

indications. He is not represented by the allegory of the blind man with the club; he never strikes at random, but always with a purpose and aim. He regards active remedial agencies as, in themselves, evils which become blessings when they aid in the escape from other and greater evils. To quote the language which some one has used, "he is content with doing nothing when ignorant how to do good."

2. The conservative physician does not undertake to control diseases which, with our existing knowledge, are uncontrollable. And if he employ measures for that end tentatively, he is governed by this rule, viz., not to subject the patient to measures which, if they do not prove successful, will diminish materially the chances of his passing through the disease with safety.

3. In the management of all the diseases which our existing knowledge does not enable him to control, the conservative physician always pursues the *expectant* practice, using this term in its proper sense, viz., as denoting not necessarily the attitude of a passive spectator of the progress of disease, but the adaptation of therapeutical measures to circumstances as they arise. In this sense, expectation expresses the proper conduct of the practitioner whenever he is not warranted in resorting to treatment with a view to arresting the progress of disease or abridging its duration.

4. The practice of the conservative physician has reference always, not alone to the disease, but to the condition of the patient. In the language of Chomel, he does not treat diseases, but he treats patients affected with diseases. A formularized, routine method of treatment for any disease is, therefore, with him impossible. In different cases of the same disease his therapeutical

measures may be quite different, and even directly opposite in their character and effects. Of two persons attacked with a disease, for instance pneumonia, one may seem to him to claim measures which are commonly known as antiphlogistic, while the other may appear to require tonics and stimulants.

5. The conservative physician directs his attention with special care to the vital powers. He is always ready to support these wherever he sees evidence of their failure, without regard to the name or the stage of the disease. He does not wait for the last flickerings of the lamp of life before resorting to sustaining measures; he endeavors to prevent the flame from falling to so low an ebb, and with sagacious foresight he would forestall the occurrence of failure, resorting to sustaining measures even when not imperatively required, rather than run much risk of deferring them when they might be useful. A full appreciation of the importance of supporting the powers of life (using this metaphorical expression in its common, well-understood, practical sense) is, *par excellence*, a trait of conservative medicine.

6. The conservative physician is by no means a timid practitioner. He carries a lancet, and is ready to use it under certain circumstances, although, it must be confessed, the instrument is apt to become rusty from non-use. He does not repudiate any of the potent measures embraced in the materia medica, but he seeks to employ them with a nice discrimination. He is bold in the use of certain remedies which are used with timidity by many practitioners to whom the term conservative is not applicable, viz., such remedies as quinia, opium, and alcoholics. His boldness, however, is quite as much displayed by resolutely forbearing to resort to potent meas-

ures whenever active interference does not seem to him to be called for, as it is by the employment of powerful therapeutical agencies.

7. Recognizing the fact that medicine should be progressive; that new developments in physiology and pathology, together with the accumulating fruits of experience, should lead to constant improvement in the *ars medendi*, the conservative physician repudiates all dogmas or systems of practice, whether without or within the pale of the profession, which shackle the mind and stand in the way of progress. In medical faith he is independent of creeds and discipleship. He occupies a middle ground with regard to the extremes of the present day as represented by old fogyism and young physic.

8. The most distinguishing characters of conservative medicine, in a few words, are as follows: Recognizing as a fundamental principle of therapeutics that potent remedies are never neutral, but must do either good or harm in proportion to their potency, it aims to abstain from active measures if uncalled for or of doubtful utility, and it strives to assist the powers of life, by means of remedial and hygienic influences, in enduring and triumphing over disease.

This enumeration of some of the prominent traits of conservative medicine might be extended, and each might serve as a text for a distinct essay. But I proceed to consider the subject under the first head, viz., "as regards the therapeutical indications derived from our knowledge of the pathological character, causation, etc., of diseases." And it will serve our present purpose to arrange diseases into the following classes: Inflammatory affections, the essential fevers, degenerations of structure, functional disorders, and a residual class to which we may apply the term diathetic. The subject covers so wide a field that it is hardly necessary to disclaim the attempt to consider it fully within the limits of a few pages. The considerations presented in this essay must needs be fragmentary and discursive, the object being merely to suggest trains of reflection.

Inflammations form the larger share of the affections with which the physician, as well as the surgeon, has to deal. The morbid processes embraced under the name inflammation have accordingly been studied with great interest; and with what success? The series of phenomena which make up the history of inflammation have been unfolded from the first appreciable event, namely, the determination of blood to, and its detention in, the inflamed part, to the various terminations of the inflammatory processes. But the essential pathology underlies that first appreciable event. What is it which occasions the determination of blood to, and its detention in, an inflamed part? The causation involves a knowledge of inappreciable conditions antecedent to the development of the phenomena of inflammation. Reference is here had, of course, to inflammations which are not traumatic. It is as certain that some unknown causative influence exists and acts in, as yet, some unknown manner, to give rise to an inflammation when it is said to be spontaneous, as it is that the local injury produces the inflammation when traumatic. If this be a fair statement of our knowledge of the essential pathology and causation of inflammation, what rational conclusion may be drawn therefrom respecting therapeutics? Ought we to expect to be able to suppress an inflammation by diminishing the quantity of blood in the body;

or by trying to direct blood elsewhere; or by the production of an inflammation in another part; or by evacuating the stomach and bowels; or by exciting some violent commotion in the system under a vague notion that the local affection may be shaken off? Are the pathological and causative conditions seated in the blood or in the nervous system, or in both? This question we may hope to answer when the physiologist has explained more fully the mysteries of the capillary circulation and of nutrition. Until then, we can hardly expect to find rational indications for arresting inflammation. Our knowledge of the means for this end must be empirical; and experience has not yet led to the discovery.

Let it not be said that medicine is disparaged by this view of the resources of our art. A conservative practice can do vastly more than simply not do harm by vainly attempting, with the measures just named, to extinguish inflammations. It can do much for the safety of the parts inflamed by measures to palliate local symptoms, to promote favorable modes of termination, to obviate incidental evils, to aid in the removal of morbid products, etc. Conservatism dictates measures for those ends embracing surgical as well as medical interference, as, for example, when paracentesis is resorted to in pleurisy. Conservative practice can do a vast deal by measures addressed to the system. To obviate the general disturbance occasioned by inflammations, or, in other words, to render the system more tolerant of their existence, by means of opium and other anodyne remedies; to support the vital powers by means of tonics, alcoholics, and nutriment—these are indications which have reference to the safety of the patient, and a speedy triumph over the disease. In fulfilling these indications the conservative physician is often called upon to act boldly, resolutely, and perseveringly.

It is to be considered that, exclusive of certain acute inflammations which may destroy life by obstructing the exercise of vital functions, as pericarditis by the pressure of liquid effusion, laryngitis and capillary bronchitis by preventing the passage of air to and from the pulmonary vesicles, etc., death is generally caused, not by an irremediable injury to the inflamed part, but by the general disorder and failure of the vital powers. Acute peritonitis, for example, is a dangerous disease, not on account of the damage done to the peritoneum or the abdominal viscera, but because the powers of life do not hold out a sufficient time for recovery. Patients may die with this, as with other inflammatory affections, for the simple reason that they do not live long enough for the restorative processes to take place. Is it not, then, an indication not less in accordance with conservatism than with common sense, to endeavor to obviate the general disorder, prevent failure of the vital powers, and prolong life sufficiently for restoration?

Acute peritonitis has just been cited. How striking an example does this disease afford of an immense improvement due to bold conservative practice! How fatal was this disease under the treatment until recently in vogue, and for which, alas! the practitioner still finds authority in some standard works! Who that has had an opportunity of contrasting the past and present methods of treatment, can doubt that the former want of success was measurably due to overdepletion and cathartics? The comparative success of the present treatment, doubtless, is by no means wholly due to the abandonment of these measures. The free use of opium, and of alcoholics when indicated, has contributed, in no small measure, to this success. This is a reasonable opinion, although here, as with respect to other diseases which have rarely been observed under circumstances in which no medical treatment was employed, it is not easy to determine how much a more successful treatment may depend simply on the displacement of injurious measures.

Directing attention to chronic inflammations, to what is their chronicity attributable? Sometimes to an obvious, persisting cause of irritation; sometimes to a palpable, associated morbid condition, as when bronchitis is kept up by pulmonary congestion due to cardiac lesions; sometimes to lesions which, from the situation of the part affected, are restored with difficulty, as in cases of chronic dysentery. In other instances it is attributable to an inappreciable condition, which, for the sake of distinction, it is customary to call a constitutional cause. Who has not seen chronic venereal ulcers of long standing heal under the use of mercury; or periostitis, from which the patient may have suffered for many months, rapidly disappear under the use of the iodide of potassium? Now, there is reason to believe that certain chronic inflammations are not less dependent on a constitutional causation, although the cause may not be of a specific character like that in syphilis. This is by no means a new idea. It was the leading idea in the teachings of Abernethy, and, as the basis of the so-called *alterative* treatment, of which mercury was considered as the chief, it has led to not a little injurious medication. In fact, a signal instance of conservatism is the infrequent induction of mercurialization in the treatment of chronic inflammations, at the present time, as contrasted with the frequent resort to this measure but a few years ago. On the other hand, the existence of a constitutional causative condition in certain inflammations is often not sufficiently considered by practitioners, and hence an over-reliance on topical measures of treatment which are not only inefficacious, but not infrequently contribute to perpetuate the affection.

As an illustration of the fact just stated, I will select an affection which of late years has attracted a good deal of attention, both professional and popular, namely, chronic pharyngitis. Exclusive of cases of syphilis, this affection is very common, especially among persons of the male sex engaged in pursuits which overtask the nervous system and involve sedentary habits. For several years past this affection has been treated very generally by means of topical, cauterizing applications, usually the nitrate of silver, repeated at intervals for a greater or less period. Has this treatment proved successful? For one, after considerable experience, I am prepared to answer this question in the negative, and this I find to be a conclusion drawn by many from the results of experimental observation. The treatment, I am persuaded, is not only rarely beneficial, but often aggravates the affection. The affection is the local expression of a constitutional state, and will prove rebellious to treatment so long as the latter continues. General measures, in which hygiene plays an important part, effect the cure. I shall content myself with this illustration, although others might be added. Suffice it to say that the same conclusion, I am persuaded, may be drawn with respect to severe topical treatment in diphtheria, and in chronic inflammations seated in other accessible situations, for example, ophthalmia, erysipelas, and certain of the affections of the cervix uteri.

Conservatism dictates an appreciation of the dependence of local affections on a morbid constitutional state, although our present knowledge may not enable us to understand the primary and essential deviations from health which constitute this state. Conservatism sanctions the trial of remedies, under proper restrictions, with a view to the removal of this state. Conservatism is ready to accept remedies for that end, the efficacy of which has been empirically established, without requiring an explanation of their *modus operandi*. The chlorate of potassa, in certain affections of the mucous membranes, would appear to be a remedy of this description. We may hope that additional remedies of this kind may, from time to time, be discovered. Meanwhile, conservatism enjoins, not only an acquaintance with the resources of our art, but a just appreciation of the limitations incident to the present state of knowledge; and hence, with reference to the affections under consideration, conservatism tries to avoid being led into injurious medication by such loose expressions as "substitution of healthy for diseased action," and "alterative treatment," expressions which have served as a warrant for not a little mischievous practice.

Finally, conservatism enjoins as a general indication in chronic inflammations, to place and maintain the body in the best possible condition, by means of tonic remedies, adequate alimentation, and the hygienic influences which conduce to that end. It is consistent alike with experience and good sense, that, other things being equal, the nearer the normal standard the condition commonly known as the general health, the better the prospect of recovery from chronic inflammation, and the better fortified is the system to endure its continuance.

Passing to the essential fevers, we know that each of them has its own morbific agent, that is, a special cause which will produce one particular species of fever, and that species only. The special cause of variola, for example, will never give rise to rubeola or scarlatina. The special cause known as marsh miasm will not give rise to typhoid or typhus fever. Each of the two last-named species of fever has its own special cause, which will not give rise to the other species. These statements are based on logical inferences from certain facts, not on the demonstrative proof afforded by an analysis and comparison of the different agents which constitute the poisons producing these diseases. Our belief in the existence of these poisons is not derived from our knowledge of their nature. What their chemical and physical characters are we know not. We know that an exceedingly small and even an inappreciable amount suffices to produce fever, as when certain of these fevers are produced by inoculation and by contagion; and analogical reasoning has led to the conclusion that they act as ferments, or on the very imperfectly understood principle of catalysis. Hence, we say these diseases belong to a class distinguished as zymotic. And if they act on the principle of catalysis, their primary action must be in the blood. We, therefore, accept the humoral pathology of fever. The demonstrative part of this pathology is confessedly wanting, but it may be considered logically established.

Now, the aim of conservative medicine being to afford protection against disease, on the one hand, and, on the other hand, against needless and therefore injurious medication, the first inquiry is, do the present resources of our art enable us to control these diseases? As regards the purely periodical fevers, this question may be answered affirmatively. We can control these by means of certain special or specific remedies of which quinia is the most efficient. These remedies, for the time being, either neutralize the poison, or, in some way, suspend its morbific action. Conservatism thus manifests its power to protect against disease by its ability to arrest these fevers. And it has also manifested its protection against needless medication by doing away with certain preparatory and adjunctive measures which, until recently, were deemed important, experience having abundantly shown their inutility. In fact, the doing away with bleeding, emetics, cathartics, and mercurialization, in the treatment of intermitting and remitting fever, is a striking illustration of conservatism. It is but a few years ago that these measures were in vogue; it was then thought to be injudicious to enter upon the special remedy at once; this remedy was given timidly in small doses only, never except in the apyrexial period, and not if the fever were complicated with local inflammation. In each of these particulars, the treatment has changed, and the change constitutes one of the most important of the late improvements in practical medicine.[1]

---

[1] The January No. of the American Journal of the Medical Sciences, in 1841, contains an article, by the author of this essay, on the management of intermitting fever. In that article the following points were set forth: The safety and propriety of giving quinia in large doses, *i. e.*, from ten to twenty grains; the inutility of preparatory treatment, and of the use of emetics, cathartics, etc., during the progress of the disease; the diminished liability to relapses in proportion as the paroxysms are promptly interrupted, and, in cases in which inflammatory complications exist, the importance of giving the special remedy in doses sufficient to arrest at once the paroxysms. Those views were then at variance with the prevailing modes of practice. The writer is very far from assuming to have exerted much agency in producing the change in practice; but he trusts he may be excused for stating that the article referred to advocated, in all respects, the change which has actually taken place.

Protection against the eruptive and continued fevers, like that afforded by quinia and other antiperiodic remedies against the periodical fevers, is reserved for the future. We cannot control the former as we can the latter. Yet, with regard to the most formidable of all, namely, small-pox, the glorious discovery of the immortal Jenner, by way of prevention and modification of its severity, affords a protection almost complete, and has deprived the disease of nearly all its terrors. The contagiousness of the eruptive and continued fevers, and the fact that they have a definite, self-limited career, may seem to discourage an expectation that means of controlling them will ever be discovered; but how little ground was there to anticipate the fact that the virus of variola, as modified by its production in the body of the cow, would give rise to an affection insignificant except in regard of its power of protecting against the virus received from our own species? How many would have anticipated the wonderful modification of small-pox produced by inoculation! It is not unreasonable to hope that other Jenners will hereafter arise, although Providence may have ordained their appearance at remote epochs. Meanwhile, it is a legitimate object of experimental research to discover means of preventing, arresting, and modifying the eruptive and continued fevers. There is ground for the belief that certain measures, which have been already tried, are occasionally successful in suspending and shortening typhus and typhoid fever. This remark has reference to large doses of opium, and hydropathic measures. But in experiments for these ends the rule of conservatism already mentioned is to be observed, namely, not to make trial of measures which, if they do not succeed, will be likely to prove in themselves dangerous. The conservatism of present practice is strikingly shown by the relinquishment of potent measures to break up the continued fevers, namely, bleeding, emetics, cathartics, and mercurialization, the inefficacy of which experience has abundantly established.

The present prevailing views of the management of the eruptive and continued fevers, irrespective of measures to arrest them, or abridge their duration, are eminently on the side of that conservatism which protects the system against needless medication. Practitioners now rarely subject patients to loss of blood in order to abate the intensity of febrile excitement and prevent the development of local congestions or inflammations; they do not produce local complications by blisters and other means of counter-irritation; they do not subject the system to the perturbation of cathartics to change the condition of the stomach and remove saburral matters; they do not give cathartic remedies to cleanse the bowels, increase the flow of bile, or improve the secretions; they do not resort to powerful measures to produce perspirations which they hope may prove critical; they do not attempt to salivate under the vague notion of producing an alterative effect. These anti-conservative measures belong to the past, and the physician is now satisfied, if he cannot arrest or abridge these diseases, to pursue an expectant course; he watches symptoms, and meets indications as they arise in individual cases. He may see nothing which calls for medication during the progress of the disease. Hygienic conditions receive his special attention, the importance of these having come to be more and more appreciated in proportion as remedial agencies have been used with greater discrimination. Palliation of symptoms and supporting measures often constitute the sum and substance of his treatment. The latter, if occasion require, he employs boldly and perseveringly. In certain cases, when his great object is "to obviate the tendency to death," he supports his patient as he would hold up a drowning man, until, by vigorous exertions, at length the shore is reached.

No branch of the science of medicine has excited greater interest, of late years, than the study of structural changes. Here the application of the microscope has been of inestimable service, by unfolding, first, the minute structure of organs in health, and, second, the alterations due to disease. How much light has been shed on our knowledge of the various lesions of different organs—the brain, liver, kidneys, heart, &c.! And much more information is to be expected from continued microscopical researches. But, complete as our knowledge of appreciable changes of structure may become, this knowledge is but the scaffolding raising us higher and higher toward the primary conditions of disease; and these are still beyond us when we have reached the highest point of elevation. In other words, structural changes are the effects of prior morbid actions, and the latter must be understood before we can comprehend fully the essential character of diseases. I am far from wishing by this statement to depreciate the results of microscopical researches. It is easy to cite illustrations of their great practical value. Thus, our knowledge of the changes which the cerebral arteries undergo from the deposit of fatty granules, enables us to explain the occurrence of apoplexy; our knowledge of the fatty degeneration of the muscular fibres of the heart, affords an explanation of the weakness of that organ in certain cases and the occasional rupture of its walls; the presence of newly developed fibrous tissue in the interlobular spaces of the liver in cirrhosis, renders the occurrence of ascites intelligible; the loss of the secretory cells of the convoluted tubes of the kidneys in certain affections of the kidneys, accounts for the production of uræmia—and numerous additional examples might be cited to show how important in their bearings on practical medicine are the developments for which we are indebted to the microscope. Still, morbid anatomy, in its widest scope, is but a province of the natural history of diseases. It describes appearances; it traces the different steps of morbid alterations, and strives to ascertain their points of departure—and this is vastly important; but the prime source of the lesions which it studies underlies and precedes the earliest of the changes which the senses can discover. Take, for example, Bright's diseases, and admit the researches of Dr. George Johnson and others to have established that the structural changes incidental to these diseases have their point of departure in the secretory cells of the kidneys, and that the various morbid changes of the organs are fully explained by the loss of cells, the presence of fatty and other deposits, etc., we do not reach the *fons et origo* of the disease. The morbid condition on which hangs the first link of the chain of appreciable alterations, is inappreciable, and, as yet, unknown.

Commensurate with our progress in the knowledge of structural changes, has been improvement in the means of determining their existence during life. We have learned to investigate certain vital organs with wonderful accuracy. The examination of the urine, chemically and microscopically, reveals morbid conditions of the kidneys; auscultation, together with the other methods of physical examination of the chest, discloses the lesions to which the lungs and heart are liable. Means of interrogating in like manner, the liver and other of the abdominal viscera, will, in all probability, be found when their structural changes and their pathological relations have been more fully studied. But it is to be considered that the diagnostician deals with symptoms and signs representing existing changes which have made more or less progress. He determines mischief already done. He has not often the opportunity, and, if he had, he is rarely able to foresee the occurrence of internal lesions. Every clinical observer knows that affections involving irremediable lesions are developed imperceptibly, and are already developed when cases first come under the cognizance of the physician. This is true of Bright's diseases, cirrhosis of the liver, pulmonary tuberculosis, carcinoma in various situations, organic disease of heart, etc. Vastly important as it is to determine the existence of lesions and the amount of damage which they have occasioned, it would be of immense advantage to be able to go still farther and ascertain the existence of those morbid actions which precede and determine the development of structural changes.

Not to dwell too long on these considerations, let us inquire into their general bearings on therapeutical indications. What are the dictates of conservatism in view of the foregoing facts? Suppose an important organ to be the seat of some structural change, and, so far as the organ is already damaged by the change, the affection to be irremediable. Nature, to a certain extent, has provided for such a state of things, by furnishing a surplus amount of structure in important organs. The lungs are so far beyond the actual wants of the economy, that a loss equivalent to the functional capability of one whole lung is not incompatible with robust health. The two kidneys exceed by at least the function of one of these organs, the necessities of the system. The heart may be considerably impaired, and still be sufficient for the circulation; and so with the liver, and, doubtless, the glandular organs contained in the stomach and intestines. *Medicus naturæ minister est.* The physician should endeavor to aid nature in doing as well as possible under the damage which the affected organ has sustained. How is this object to be attained? In general terms, by preventing, if possible, any farther progress of the structural change, and placing the organism in the best possible condition compatible with the existence of the lesion.

We may lay it down as a rule of general application, that an organic affection is less liable to progress, the functions of the affected organ suffer less, the system is less disturbed, and the local mischief is borne for a longer period, in proportion as, in all other respects, the body approximates to a state of health. Striking results are often obtained in cases of an incurable malady, by effecting an improvement in the state of the system. For example, it has occurred to me repeatedly to see patients enter hospitals with renal disease accompanied with such an amount of dropsy, prostration, etc., that the prospect of improvement seemed most unfavorable; but, after a time, the dropsy has disappeared, the strength has improved, and the patients have left the hospital feeling able to return to labor. I do not now refer to cases of acute albuminuria, which may pursue this course and end in recovery, but to chronic cases of an incurable affection of the kidney. The lesion continues in the cases referred to, the urine remains albuminous, and, sooner or later, grave consequences are developed. Whence the marked improvement and apparent recovery? Simply because the system has been improved by rest, by nutritious food, by tonic remedies, and, probably, by an interruption of habits which have contributed greatly to the production of the local affection. Similar examples might be cited of patients with other affections, such as cirrhosis of the liver, cardiac lesions, and pulmonary tuberculosis. Structural changes generally commence and increase to a certain extent without giving any obvious manifestations of their existence; the system tolerates them, provided it has nothing else to bear. But when other circumstances occur to disturb or weaken the economy, an affection, up to this time latent, declares itself. If now the practitioner impute everything to the local affection, he will be much in error. Let him succeed in restoring the system to the state in which it was prior to the manifestations of the affection, and the latter may again become comparatively innocuous.

A striking illustration of the influence of associated circumstances in exaggerating the effects of a local affection is sometimes afforded by the coexistence of anæmia and cardiac lesions. A patient with this combination of affections may present palpitation, dyspnœa, and general dropsy, so that a fatal termination may seem to be near at hand. But, by removing the anæmic state, the effects of the disease of heart disappear, and the patient appears to recover so fully that, were it not for the testimony of physical signs, the existence of the cardiac lesions would not be suspected. Examples of this kind have repeatedly fallen under my observation. Other examples and considerations might be adduced to show how much conservatism can sometimes accomplish by enabling the system to bear up under local affections, the continuance of which is inevitable : but I must hasten to another division of the subject.

Disorders occurring independently either of inflammation or appreciable lesions, and, therefore, distinguished as functional, differ as regards their pathological import. A correct interpretation is necessary to a full understanding of rational indications. Vomiting and purging, for example, in the course of renal diseases, have a special meaning which the researches of Bernard and others have enabled us to understand. They show, in that connection, the conservatism of nature, the object being to eliminate vicariously the urea which accumulates in the blood in consequence of its deficient excretion by the kidneys. The conservative physician thus follows the guidance of nature when he endeavors to relieve the system of this excrementitious principle by remedies which act upon the gastro-intestinal mucous membrane; and he would violate conservatism were he to attempt to arrest these symptoms of disorder of the digestive organs. In most instances, however, disorders of functions either have not so definite a significance as this, or our present knowledge does not enable us to interpret them fully; and hence the practitioner must derive his indications from certain general principles.

Functional disorders involve, for the most part, morbid conditions of the nervous system. And these, when not produced directly by overexercise or overexcitation, generally involve a prior abnormal state of the blood. This is a capital fact as regards therapeutical indications. The nervous system, as a generator of force, is powerless, and all its vital functions are speedily lost, without the presence of oxygenated blood. How quickly are the power of willing, the faculty of feeling, and consciousness suspended by the deficient supply of blood to the brain in syncope! The blood is the medium, on which the nervous system is as dependent for the capacity to perform its functions, as the body on the atmosphere for the continuance of life. It is not strange, therefore, that deviations from the normal composition of the blood should occasion disturbance of the functions of the nervous system. But the effects of certain poisons upon the nervous system, when introduced into the blood in exceedingly minute quantities, are truly wonderful. A fraction of a grain of strychnia acts upon the motor nerves, leaving the mental faculties intact, and gives rise to epileptiform convulsions; a similarly minute quantity of woorara paralyzes the nerves of motion; a few inhalations of the vapor of chloroform extinguish the faculty of feeling pain; a few drops of the tincture of the veratrum viride reduces, in a notable degree, the frequency of the heart's action; an amount of atropia almost inappreciably minute suffices to paralyze the circular fibres of the iris: these are some of the well-known manifestations of an astonishing susceptibility of the nervous system to the action of certain morbific agents contained in the blood in exceedingly small quantities. The facts just stated (of which it is only necessary to remind the reader) are valuable as shedding light on the interpretation of various functional disorders.

An impoverished state of the blood stands in a causative relation to various functional disorders. Clinical experience teaches that most of the neuroses, together with various disorders, such as palpitation, dyspepsia, constipation, etc., are often associated with anæmia, and disappear when the blood is restored to its normal condition. It is a general principle, then, in the management of functional disorders, to direct attention to the state of the blood. And here I am led to remark, in passing, that the improvements in practice based on the knowledge and appreciation of anæmia, acquired within the last few years, furnish one of the most striking of the illustrations of conservative medicine. Before this condition of the blood was understood, the affections dependent thereon were, of course, not correctly interpreted, and their treatment was inefficacious if not injurious. And the non-recognition of this condition as coincident with a host of affections, involved a want of discrimination in the employment of the antiphlogistic measures, which was the source of not a little unsuccess and injury. The anæmic state is a very important source of indications in the treatment of functional disorders; but there are doubtless other morbid conditions of the blood of which our present knowledge affords less precise information. Various functional disorders, as well as inflammations and structural changes, are probably due to toxæmic conditions which remain to be ascertained. Unknown poisons, received from without and generated within the body, may be the source of diverse affections, the origin of which we are now unable to explain. Reasoning analogically from the effects of the well-known poisons to which reference has been made, we are led to this conclusion. Moreover, we have already acquired knowledge of certain forms of toxæmia, occurring as results of morbid actions within the organism. We know that urea accumulating in the blood acts as a poison on the nervous centres, giving rise to epileptiform convulsions and fatal coma. We know, too, that serous and other inflammations are incidental to uræmia. The researches of Garrod appear to establish that gout is due to the accumulation of uric acid in the blood; and the ingenious and striking experiments of Dr. Richardson go to show that it is lactic acid which gives rise to the articular affection and to endocarditis in acute rheumatism. May we not expect from researches in this direction developments which will shed new light on the production of other affections, and furnish important therapeutical indications? Assuming, for example, that cholesterin is an important excrementitious product produced in the brain and nerve-tissue, and eliminated by the liver, it is probable that a deficient excretion of this substance is the source of a toxæmic condition which has important pathological relations; and we may find that there is a substratum of scientific truth in the vague notions of biliousness with which the professional and popular mind have been so long and strongly imbued. Cholesteræmia is one of many analogous conditions of the blood which are yet to be clinically studied.

Reasoning from the analogy between the effects of certain poisons and the phenomena of certain functional affections, it is reasonable to attribute the latter to a toxical source. For example, the phenomena of epilepsy bear so much similarity to the effects of strychnia, that the convulsions produced by this poison are said to be epileptiform; and this is true also of the convulsions incidental to uræmia. Now, taking into view the clinical history of epilepsy—convulsive paroxysms of brief duration, recurring at variable intervals, the patient often perfectly well just before and immediately after the paroxysm—how much more probable is it that a poison is generated somewhere in the body, and manifests itself by a powerful transient action on the nervous centres, than that the phenomena are due to any mere disturbance of the circulation or to slight changes in the consistence of the medulla oblongata such as are described by Van der Kolk. What a blessing would be the discovery of the nature and source of the toxæmic condition giving rise to epilepsy and of the means of preventing the production of the poison!

The highest aim of conservative medicine in all affections involving toxæmia from morbid actions within the body is expressed in the foregoing sentence. It is to obviate the production of the poisons. But first of all, the sources of toxæmia must be ascertained and the conditions under which its different forms are produced. Here is a field of research from which much is to be hoped for, but from which it is needless to say little has been as yet acquired. The aims of conservatism, next in importance to the one just stated, are, knowing the nature of different poisons, together with the means of their destruction or expulsion from the body, and recognizing their existence in the blood as early as possible, to effect either their neutralization or elimination.

I shall pass by the class of diseases which I have distinguished as diathetic with a very few words. The meaning of the term diathesis, which is used in a variable and often an indefinite sense, I would here limit to denote a special state of conformation or of the constitution, which, under requisite causative conditions, determines the occurrence of a particular form of disease; in other words, an intrinsic aptitude of the organism to the development of certain affections. This diathetic condition may be innate or acquired, and it is often inherited. In this sense scrofula, tuberculosis, asthma, rheumatism, gout, are diathetic affections. In what consists the diathetic state our existing knowledge does not enable us to say.

Conservatism would dictate the importance of removing the state if it be practical. But it is evident this is not to be done by medication, for the existence of a diathesis is not inconsistent with health; and, moreover, we have not the means of determining with positiveness the existence of a diathesis until it has eventuated in the development of disease. That a diathetic state may be held in permanent abeyance we have every reason to believe. This is accomplished more by hygiene than by therapeutical influences, viz., by climate, habits of life, and avoidance of the causative conditions which render active a latent diathesis. This division of the subject is by no means lacking in interest and importance, but the space already occupied warns me not to enter more fully into it. Besides, the considerations which are suggested under this head relate more especially to hygiene, and the application of conservative medicine to this department of medical practice does not enter into the scope of the present essay.

So far, the subject of this essay has been considered in the first of the two aspects under which it is to be regarded, viz.: "The therapeutical indications derived from our knowledge of the pathological character, causation, etc., of diseases." It remains to notice the second aspect, viz.: "The general objects of remedial measures." These two divisions of the subject are correlative; therapeutical indications and therapeutical objects are, of course, mutually involved, but new considerations arise in looking at the subject from the latter point of view. I shall content myself with endeavoring to classify the objects of remedial measures, and offering a few remarks under the head of each class. The conservative physician places before himself certain general objects in dealing with diseases; what are these objects? They may be embraced in five classes:

1. The first object is prophylaxis. Diseases may sometimes be prevented. It is not strictly appropriate to call this a therapeutical or remedial object, but in so far as medicinal agents are employed for the prevention of diseases, the object falls within the province of the therapeutist, and the incongruity is merely in the use of terms which imply that disease already exists. Excluding preventive measures which are properly surgical, such as the cauterization of poisoned wounds, etc., known prophylactic remedies are not abundant. In fact, we are limited to a few examples. The protective efficacy of quinia against intermittent fever may be considered as sufficiently established. Alcohol appears to protect the system against certain venoms. The protective power of alcohol against tuberculous disease is a question *sub judice*, and one may well dread the settlement of the question in the affirmative. The antidotes to poisons in the stomach are preventives of the diseases which they would produce if not neutralized. In like manner, we might hope to discover antidotes to hæmic poisons, were we acquainted with their nature, and aware of their existence prior to the production of the affections to which they give rise. Doubtless by judicious management secondary affections may sometimes be prevented. Thus, by favoring the elimination of urea, in uræmia, either

through the kidneys or the alimentary canal, we may prevent, for a time at least, inflammations, convulsions, and fatal coma; and by restraining the excretion of albumen with the urine, we may prevent the occurrence of dropsy. Other instances of this kind of prophylaxis might be cited; but it is evident that what we may accomplish is, for the most part, only a matter of reasonable conjecture, and could not be established by positive proof. It is a curious fact that certain affections appear to be prophylactic as regards others. Asthmatic persons very rarely become tuberculous. The same is true of persons affected with organic lesions of the heart. Tuberculous patients seem to be insusceptible to the special cause producing typhoid fever. Acute rheumatism and tubercle are not often associated. Other illustrations might be cited. The incompatibility of certain diseases, however, can hardly be made available in practice; and, in short, our expectations from the future, as regards the discovery of prophylactic medicinal agents must needs be small were they to be measured by what has been already discovered.

2. A second object is the arrest of diseases. To arrest diseases *in limine*, cut them short, or, in the significant language of some French writers, jugulate them, is, obviously, an object in desirableness ranking next to prophylaxis. But as regards the extent to which this is practicable, how different the popular belief from the present views of the best informed members of the profession! The notions of the public concerning medical matters generally emanate from the profession, and the reason why patients expect diseases to be arrested is, the ability to do it has been assumed by physicians. It is not long since physicians conscientiously believed that

they often strangled diseases which now they are content to allow to run their course. It is only a few years ago that inflammations and most of the essential fevers were considered to be amenable to what have been called abortive measures of treatment. Popular notions are not readily changed, and, with respect to this point, our knowledge is simply in advance of public faith. But why is it that physicians were formerly self-deceived in this regard? Chiefly because the art of diagnosis had not been brought to such perfection as it has been within the past few years. Patients with an attack of pleurodynia or intercostal neuralgia, for example, were often thought to have acute pleurisy or pneumonia. A copious venesection, an active purge, and a blister, appeared to check, at once, the progress of the inflammation. The pain was in fact suspended, and although the recovery from the effects of the remedies may have been slow, the treatment appeared to be signally successful. Neuralgic affections had been comparatively but little studied, and were often confounded with inflammatory affections. Practitioners thought that they contended with inflammation of the bowels and brain much oftener than now. Ephemeral fevers were considered to be examples of continued fever broken up. As we have improved in diagnosis, the resources of therapeutics have seemed to be curtailed. Yet, what an improvement is it that the active treatment formerly in vogue to arrest many diseases, is no longer resorted to for that end! Conservative medicine has here gained much in the way of protecting the body against the evils of needless therapeutical measures.

On the other hand, conservative medicine has gained much in the way of abortive treatment in certain affections. The periodical fevers are arrested with much more promptness and certainty than some years ago. This is true of certain functional disorders, such as colic, cholera morbus, and certain forms of neuralgia, by means of the bolder use of certain remedies, especially quinia and opium. We can count on the arrest of some diseases, but it must be confessed, the number is very limited, not embracing those which are the most frequent, namely, inflammations and other than the periodical fevers. Here is ample scope for future discoveries which may enlarge beyond our present powers of calculation the resources of practical medicine.

3. A third object is the cure of diseases. I use the word cure in its conventional sense. From its etymology it should denote simply the care (*cura*) of the sick. And the latter signification expresses the true function of the physician. His business is to take care of the sick, which means, watching the course of disease, applying the art of diagnosis and of prognosis, bringing to the bedside his knowledge of the natural history and laws of different affections, regulating hygienic conditions, exercising a proper moral influence, and prescribing remedial agents where these are required. Thanks in behalf of the character of the profession, medical practice bids fair to become something higher in the estimation of the public than the administration of drugs! The time is coming when the idea of the doctor will be less inseparably associated than heretofore with the lancet and pill-box! But using the term cure in its conventional sense, it means the exercise of a controlling influence, to a greater or less extent, over diseases. And as an object of therapeutics, the curative treatment will embrace measures which abridge the duration of diseases, diminish their

severity, or which influence favorably their progress in any manner and conduce to a favorable termination.

As with the arrest, so with the cure of diseases, the efficiency attributed to therapeutical interference would seem to have decreased in proportion as our knowledge has advanced. Physicians formerly congratulated themselves on curing diseases which ceased by their own limitations, and which had no tendency to a fatal result. The recovery was considered as proof of a cure having been effected, and that they were not indefinitely prolonged, was evidence of their duration having been abridged. The study of the natural history of diseases within the last few years has led to the knowledge of the laws of self-limitation, and of the amount of danger which belongs to them intrinsically. The consequence is, the physician is content to assume to be more the servant, and less the master of nature. He undertakes less, and nature has the opportunity of accomplishing more. Here, too, popular belief has not kept pace with the improvement of medicine, and patients are often not satisfied to be taken care of, but expect to be cured. Unquestionably, cases of disease are better managed now than heretofore, and the improvement involves, in part, less reliance on certain therapeutical agents which were formerly considered as curative. I refer more particularly to the so-called antiphlogistic measures. We should not hesitate to acknowledge this fact. It is certainly no disparagement to medicine that it has improved, and it must be expected that improvement will consist, measurably, in the correction of errors, as well as in newly acquired resources. But the improvement is by no means wholly of this negative character; it consists, measurably, in the employment of more efficient curative treatment. Of the latter, the free use of opium in acute inflammations, and especially in acute peritonitis, is the most prominent example. The use of large doses of the iodide of potassium in syphilitic periostitis, and in some of the forms of chronic inflammation, and of quinia as a curative remedy in remitting and yellow fever, and in certain cases of neuralgia, may also be cited in the same category.

The antiphlogistic measures of treatment were formerly employed too indiscriminately because inflammations were not accurately discriminated from other affections; and too freely because undue relianee was placed on their curative influence. What is the correct estimate of their efficiency? This is a question which every reflecting physician cannot but have propounded to himself. Do bleeding, cathartics, antimony and other sedatives, mercurialization, etc., exercise curative influence over acute inflammation? Do they contribute nothing toward diminishing the intensity of inflammation, shortening its duration, limiting the amount of exudation, and favoring resolution? If not, these measures always do harm, and should never enter into the treatment of inflammation. There are observing and thinking physicians who adopt the latter view, and there are those who still have great faith in the efficacy of these measures. The truth probably lies between these extremes. For one, I am not prepared to ignore entirely the experience of candid, sagacious observers for many past generations. I believe that these measures may exert a certain amount of curative influence, and that whether they do harm or good depends on the discrimination with which they are employed. If resorted to injudiciously, the harm will preponderate over the good; and if judiciously employed, their use will undoubtedly be much restricted as compared with the past.

This train of remark has opened up a large topic which I cannot here discuss. I shall leave it after pointing out a highly important practical application of the *juste milieu* doctrine with regard to antiphlogistic measures. And I am led to make this application because it involves, as it seems to me, a nice exemplification of conservatism. There are certain inflammations, to which reference has been already made, which destroy life, not from their extent or intensity, but from circumstances incidental to their situation. This is true of acute laryngitis. The same amount of inflammation situated elsewhere, would be trifling; here it is fatal by causing obstruction at the larynx. Capillary bronchitis is an analogous example; the danger is from the obstruction of the small bronchial tubes. Acute meningitis is another example; the danger is chiefly from compression by the products of inflammation. Patients die from these inflammations by apnœa. On the other hand, the source of danger in inflammations situated elsewhere is, generally, in the disturbance of the system and failure of the vital forces. Patients die in most cases by asthenia. Now, in the latter inflammations, the evils of the antiphlogistic measures have reference to the source of danger and the mode of dying; and the problem is, to determine whether the curative influence of these measures, as regards the local affection, will overbalance their effect on the powers of life, or *vice versâ.* In the one case good, and in the other case harm, will preponderate. But in the former inflammations there is not the same need of sparing the powers of life. The danger is not from the giving way of these. Hence, we may consider chiefly, in such cases, the curative influence of antiphlogistic measures as regards the local affection; or, in other words, we have not to balance the probabilities of good or harm as in the previous problem, but simply to secure all the good to be obtained by their judicious employment. This mode of reasoning will be likely to lead to the continued use, to a greater or less extent, of antiphlogistic measures in certain inflammations, albeit their use may be generally abandoned as either unnecessary or as doing more harm than good.

4. The fourth object is palliation. Palliative measures enter largely into the management of diseases. They mainly constitute the treatment in two classes of cases: *first*, in those in which the disease pursues a favorable course without the need of active interference; and, *second*, in those which offer no encouragement for curative treatment. Relief of pain or distress is an important object of treatment irrespective of the issue of a disease; and it is to be reckoned among the recent improvements in practice not least in importance, that physicians are not now to be restrained, as they have been, in the use of opium and other anodyne remedies, by apprehensions of their unfavorable influence on the progress of various affections. We hear much less nowadays than formerly of the danger of producing cerebral congestion or locking up the secretions by opiates, notions which often deprived patients of the comfort and advantage to be derived from their use. Palliative measures, although addressed to symptoms, and not to the disease *per se*, may, nevertheless, be to a greater or less extent curative by diminishing the general disturbance and consequent exhaustion incidental to the continuance of suffering.

5. The fifth object is support. Pre-eminent among the

characteristics of conservative practice is the employment of supporting measures in all cases of any disease, whatever be its name, character, or situation, in which danger from failure of the powers of life is to be looked for. Of the importance of this object enough has been already said in the course of the foregoing remarks. Suffice it to add a consideration having reference to the value of support in cases which are unattended with danger to life. In emerging from an acute disease of any kind, a patient who has been judiciously supported by tonics, nutritious food, and, if need be, alcoholics, enters upon convalescence with vigor of body and mind far less impaired than if this object of treatment had not received appropriate attention, and the complete restoration is more rapid. A comparison of the condition of patients, now and formerly, after the termination of diseases in convalescence and recovery, would perhaps afford a stronger contrast illustrative of improvement in practice, than a comparison of the rates of mortality. This contrast is, in part, due to differences pertaining to the employment of curative measures of treatment, but, in no small measure, also, to differences of management as regards supporting measures.

The foregoing classification of therapeutical objects does not embrace, distinctly, a class of measures which hardly ranks inferior to any in its bearing on the management of diseases. I refer to sanitary or hygienic measures, relating to air, temperature, diet, cleanliness, climate, moral influences, etc. The subject of this essay embraces only considerations relating to therapeutics. *Conservative medicine as applied to hygiene*, is a subject not less fruitful in practical considerations. This subject is reserved for a future essay.

III.

CONSERVATIVE MEDICINE AS APPLIED TO HYGIENE.[1]

AS the phrase *Conservative Medicine* may be misconstrued, a brief explanation is to be premised. The term Conservatism may be used to express a principle which leads the practitioner, in dealing with diseases, to preserve, develop, and support the vital powers. The unfolding of this principle more and more during the last quarter of a century, has been a result of the progressive increase of the knowledge of the organism in health and disease, together with the accumulating fruits of clinical experience; it is the characteristic of the therapeutics of the present time, as represented by the views of the ablest writers and practitioners, and it is claimed that it should be considered as the governing principle in medical practice. For a fuller exposition, the reader is referred to the previous essays on the subject.

The subject of conservative medicine in the articles just referred to, has been considered chiefly as regards its therapeutical relations. The purpose of this article is to consider the subject in its relations to *Hygiene*. Here, as heretofore, the largeness of the subject is such that the writer can only aim, within the limits of a single article, to present a few desultory thoughts which may be suggestive, in the minds of his readers, of trains of reflection leading to important practical conclusions.

---

[1] Published in the American Journal of Medical Sciences.

Hygiene enters alike into the prevention and management of diseases. The name suggests more especially measures concerned in the preservation of health; but, in therapeutics, all measures, not medicinal, may be distinguished as hygienic. I shall use the term with this breadth of application. And it will be a natural division of the subject to direct attention, *first*, to hygiene in health, and, *second*, to hygiene in disease. I will adopt this arrangement.

Conservatism, as applied to hygiene in health.—There is no need to argue for the validity of the principle of conservatism as applied to the preservation of health. Hygiene, in this application, can, of course, have no object which does not assume to be conservative. To weaken the powers of life, or impair the constitutional strength, is never the design of measures to prevent disease. The violations of the principle which fall within this division of the subject proceed either from ignorance, or false notions as regards the effects of means supposed to be conservative. Violations of the principle are less frequent and less marked now than formerly; the progress of conservative medicine is shown in its prophylactic, as well as its therapeutical relations; still, examples of not only past, but present non-conservative errors are not wanting.

It is not many years since the notion was prevalent, both within and without the profession, that there is such a condition as an overplus of health. And it was the custom to resort to potent measures to reduce the exuberance of health within safe limits. Bleeding and purging were employed ~~for this end~~. There are persons ~~now living~~ who were accustomed, ~~in their young days~~, to get bled from time to time purely as a sanitary measure. Nothing was more common, ~~a quarter of a century ago~~, than for healthy persons to apply at the offices of physicians for a venesection, which was performed, as a matter of course, on the judgment of the applicants. ~~Such~~ occurrences are very rare at the present time. Purgation, being practicable without the aid of the doctor, was almost universally employed as a health-preserving duty. Cathartics were regarded as cleansing agents, and not less important for the alimentary canal, than soap for the surface of the body. An occasional internal "scouring" was supposed to be even of greater importance than a thorough external scrubbing, for while the latter was enforced chiefly on the score of cleanliness, the former had the additional recommendation of being thought to be essential to the welfare of the system. There are many now in middle life, with whose reminiscences of childhood are associated periodical doses of sulphur and cremor tartar mixed with molasses, given regularly for a series of days, before breakfast, or at bedtime, especially at every recurrence of the vernal season. This was the cleansing mixture for healthy persons of tender age. After this period, the so-called cooling purgatives, such as the Glauber and Epsom salts, had preference. A person with an excess of health was considered to be on the threshold of disease, and the latter was supposed to be warded off by the timely employment of the lowering, cleansing, and cooling measures just referred to. The popular use of purgatives or prophylactic agents, is still sufficiently common.

Gestation is a physiological, not a pathological, state; and, since it is by no means a modern discovery that all the needful supplies for the development and growth of the fœtus are contained in the maternal blood, a common-sense view of the matter, it would seem, should have led to the conclusion heretofore, as now, that pregnant women cannot well afford to lose blood; yet, a few years ago, pregnancy was supposed, as a matter of course, to call for repeated bloodlettings. The physician who declined to bleed a healthy person desirous of losing blood simply on the score of pregnancy, had often a task in trying to remove the disappointment which his refusal occasioned. Venesection, under these circumstances, was deemed an important sanitary measure. How such an absurd notion arose I will not stop fully to explain. Briefly, it was a result of theoretical views respecting inflammation, views which led to the conclusion that the great source of danger, as regards the development of disease, was a redundancy of the vital fluid. How different the practical views of the present time, based on the belief that paucity and impoverishment of the blood are conditions often giving rise to, and standing in the way of recovery from, a variety of diseases!

As another example of the violation of conservatism, may be cited the custom with many surgeons, formerly, to prepare the system for important operations by lowering the powers of life. For this end, a course of purgatives, a system of reduced diet, and sometimes a venesection, were deemed important. This custom does not seem to be entirely exploded at the present time. In like manner, if there were good grounds to expect the speedy occurrence of any disease, as, after exposure to contagious fevers, during the period of incubation, a similar plan of impairing health, by way of preparation for the disease, was considered to be a prudential measure.

Now it may be laid down as a rule of prophylaxis that, other things being equal, disease is less liable to occur in proportion as the health is perfect and the vital powers high in the scale of strength. This rule may not invariably hold good. Some of the special causes of disease, among those styled zymotic, appear sometimes to luxuriate in vigorous organisms; but if there are exceptions, they do not subvert the rule. If this be true, it is a correlative truth that everything which impairs health or depresses the vital powers favors the occurrence of disease. Observation and common sense warrant the adoption of the latter truth as a maxim of conservative medicine. Akin to the foregoing rule is another, viz., the system is prepared to endure and recover from disease in proportion to the previous completeness of health and the degree of constitutional vigor. Without having the statistical data to demonstrate this rule, and without denying the possibility of exceptions, observation and common sense warrant its adoption as a maxim of conservative medicine. Let us, then, inquire whether among the existing notions or customs having reference to hygiene in health, there be not some which are inconsistent with the foregoing conservative maxims. I do not mean to inquire concerning those palpable violations of the laws of health, which every reflecting person recognizes as such, and which are common enough. My proposed inquiry relates to false views respecting the means of preserving health or warding off disease; in other words, instances in which persons suppose they are doing right when, in fact, they are doing wrong. It will not be difficult to find examples of this kind.

The wear and tear incident to untiring activity in the pursuits of life first suggests itself. In this country the evils springing from false notions and customs, relating to the exercise of the mental and physical faculties, are enormous. A young man enters upon active life with injunctions to push his industry to the utmost limit of his capacity of endurance; he is incited to constant exertion by the examples of others; he is stimulated by his ambitious aspirations or a conscientious desire not to be wanting in the discharge of his duties; his position and responsibilities, in the existing state of society, may seem to render excessive and unremitted assiduity imperative. He may, or may not, violate the laws of health in other respects. If he be regular in his habits, temperate and moral, he is encouraged on every side by approving friends; he is held up as a model for imitation; he looks upon himself with self-complacency; and yet, he is advancing steadily onward, perhaps, to the accomplishment of the great objects in life before him, but with greater certainty to a condition of impaired health, with the mind weakened or disordered, and a proclivity to any disease to which there may be a predisposition. All physicians, especially those who practice in cities and large towns, well know that there is a class of patients who suffer from the want of health, without having any disease which has a place in the nosology. The morbid state in these cases has been gradually induced, and many suffer without appreciating the fact that their state is morbid, and, therefore, without making application for medical aid. They feel a deficiency of their accustomed energy and buoyancy, their interest in persons and things flags, their appetite fails, they lose strength, and they are depressed, without any apparent reason, or by causes which, in a condition of health, would disturb the mind very little. These are the early effects of wear and tear, due to overtasking, not the physical powers alone, but, conjunctively, the mental faculties. Of the cases of chronic diseases, such as tuberculosis, Bright's disease, diabetes, etc., how large is the proportion in which the previous history shows the existence of wear and tear for a greater or less period prior to the development of the affection! This would be an interesting point for statistical research, but we need not wait for the results of statistics to know that the proportion is large. And, of the cases of acute diseases developed in persons suffering from wear and tear, how much of the fatality is due to the diminished power of resistance incident to the antecedent morbid state! How many would probably escape the development of acute disease were it not for this morbid state!

These considerations, while they are of vast importance, should not militate against a proper degree of attention to the objects in life. They do not show that either physical or mental activity is unfavorable to health. The reverse of this is undoubtedly true. As regards the mind, it is not the intensity of the exercise of the faculties which involves wear and tear. It is the long-continued, unrelaxed efforts, accompanied by unceasing anxiety and strain, which tell upon the system. The physician, oppressed by the weight of his professional cares, is well aware that it is not the demand for the operations of the intellect which bears heavily upon him, so much as the pressure of the sense of responsibility inseparable from his duties. It is not the frequency or force with which the bow is bent, but the constant tension, which destroys its elasticity and renders it worthless. Unremitted exercise of the mental and physical powers, although they are not overtaxed, cannot be indefinitely borne; sooner or later the system will break down. Here is a truth difficult to appreciate in its personal application; but every one recognizes it in its application to the physical endurance of inferior animals. A horse, never overworked, and in all respects well cared for, after a time must be turned out to grass. The prudent owner sees this clearly enough, and acts accordingly, while he fails to see that what is true of his horse is not less true of himself. Many persons pursue a course with respect to themselves which they could not pursue, without remorse, toward a beast of burden. It appears to be a part of the egotism inherent in some persons to think that they are so constituted as to bear an unlimited duration of steady work. Next to this is the folly of supposing that the powers of the system, when they give way, may be restored by medication. And when, at length, they find that they are not exempt from the laws pertaining to all animal, as well as human bodies, they perhaps discover, too late, that the influence of habit has rendered continuance of labor essential to happiness. Fortunate are they who, without sacrificing aught that belongs to a proper degree of assiduity in pursuing the objects of life, have taken care to preserve the capacity for healthful recreation!

It is a curious notion, which physicians sometimes inadvertently sanction, that mental and physical exertions are compensatory as regards each other. The man who is overworking the brain, seeks to make amends by fatiguing the muscles. It has occurred to me repeatedly to meet with persons who were devoting too large a number of hours daily to labor of the mind, and who imagined that this may be done with impunity provided a certain amount of muscular exercise be added. A lawyer, for example, who habitually devoted ten or twelve hours a day to intense intellectual occupation, became sensible that he was tasking unduly his mental powers, and, in order to fortify his health, moved out of town, and managed to ride on horseback from ten to twenty miles each day. Under the combined effects of the exercise of mind and body, as might be expected, he was losing ground rapidly. It is clear that exhausting mental labors will be longest borne in proportion as the time not thus occupied is devoted to physical, as well as mental, repose; and, on the other hand, that too much physical labor will be less hurtful in proportion as it is not conjoined with activity of mind.

Violations of conservatism, hardly less flagrant, in the hygiene of health, relate to diet. Both the profession and public have been sufficiently alive to the subject of gluttony. The evils of overfeeding, as regards the production of disease, have undoubtedly been exaggerated. The injurious effects of gormandizing habits are mental and moral, rather than physical. So far as health and prophylaxis are concerned, false notions in an opposite direction have been productive of more harm. A quarter of a century ago, dietetic abstemiousness was considered to be the alpha and omega of hygiene. The world was eating too much; hence, the ills that flesh is heir to. So believed, not only physicians, but the non-medical health philosophers. The great conditions of health were supposed by many to be the minimum quantity of food with which life could be supported, as little variety in the articles of diet as possible, coarseness in quality, and rejection of most of the accessory aliments. Some advised, as a security against errors of quantity, to regulate each meal by weight.

Vegetarianism had not a few apostles and disciples. We have heard a transcendental reformer contend that in assimilating meat the natural characteristics of the animals were necessarily appropriated; that is, pork communicated to man the attributes of swine, and so of beef, mutton, veal, etc. All the refinements of the art of cooking were deprecated as tempting to overindulgence.

The sense of taste was deemed a fallacious guide in the selection of articles of diet, and the appetite was so unsafe as a criterion of sufficiency, that the injunction was always to rise from the table hungry.

It was considered a wise course to watch carefully the progress of digestion, so as to ascertain after every meal whether any imprudence had been committed. The subject of dietetics was discussed, not only in medical writings and in intercourse with physicians, but it entered largely into popular literature; it not only pervaded table-talk, but ranked next to the weather in common conversation; public lecturers made no small account of it, and it was not overlooked in the pulpit. In short, the zeal in behalf of abstemiousness in diet amounted to fanaticism. And dyspepsia was the most common of all ailments among the intelligent and cultivated classes, while it was rare among those who, without thinking of dietetics or digestion, satisfied the appetite with the food placed before them. There is reason to believe that the fanatical notions just referred to, not only contributed to the prevalence of dyspeptic disorders, but favored, in no small degree, the development of other and graver affections, by impairing health and lowering the vital powers.

These notions are by no means yet obsolete either within or without the profession. There are many now who fancy they promote the welfare of body and mind by habits of diet which are incompatible with the highest degree of mental and physical vigor. There are physicians who sanction such violations of the hygienics of health. It is still considered by not a few to be gross and unrefined to eat heartily. Especially with the other sex, it is deemed a lady-like accomplishment to have a delicate appetite, and abstain from the more substantial articles of food. There are fashionable boarding-schools where, as a part of the educational discipline, girls are placed under dietetic restrictions which, in a measure, explain the imperfect development, the anæmia and feebleness of constitution of those who are preparing to become wives and mothers. It is not yet sufficiently appreciated by all, that the *mens sana in corpore sano* is best secured by nutritious supplies abundant and varied; that the healthiest, ablest, and best men and women have been good feeders; that an excess of ingesta over the absolute wants of the economy is not necessarily an evil, there being provisions made for the disposition of an overplus, but none against a deficiency of aliment; that generous living, constituting an important part of the management of certain diseases, *e. g.*, pulmonary tuberculosis, must be also important in preventing their development; that hunger, appetite, and taste were designed to govern dietetics, and are adequate to their office; and that personal experience derived from watching the progress of digestion, is extremely fallacious.

There is still, therefore, scope for the progress of conservatism in this direction, in order to meet the requirements of existing knowledge and of common sense.

With these few remarks on conservatism as applied to hygiene in health, I pass to the second division of the subject.

Conservatism as applied to hygiene, in disease.—The importance of the hygienic management of diseases has not been, and is not, adequately estimated, for two reasons: *First*, because hygiene in its relations to health has been imperfectly understood and is not sufficiently appreciated: and, *Second*, too great reliance has been placed on medicinal measures of treatment. It is only within late years that the profession has begun to be awake to the vast importance of the study of the laws of health. Sanitary science is yet in its infancy, and claims far more interest and attention than it now receives. The main dependence, hitherto, in the management of diseases, has been on the curative influence of remedies. That many diseases, under favorable hygienic circumstances, intrinsically tend to recovery, is a fact but recently known and still too little considered. The mind of the physician is too often engrossed with the inquiry, "What drugs shall I give to effect a cure?" and, hence, he frequently loses sight of another inquiry, often of far greater consequence, viz., "What hygienic regulations will contribute to the recovery of the patient?"

This division of my subject has diverse relations. In one aspect it relates to the various hygienic circumstances embraced under the head of diet and regimen; the latter comprehending influences affecting not only the physical but the mental and moral being. In another point of view, it relates to different diseases, the different stages of disease, and the numerous circumstances which are incidental to disease. I cannot undertake to treat of this more than the former division of the subject with any approach to completeness, or in a systematic manner. I shall only offer a few desultory thoughts, and I will consider first the topic which was last considered in the former division, namely, *diet.*

A striking improvement in the practice of medicine, of late years, relates to diet. Physicians have learned to appreciate, more than formerly, the value of supporting treatment in fevers and other acute diseases, and to regard alimentation as an essential part of this treatment. They have also learned that it is a great object in various disorders and chronic affections to build up the powers of the system, and that this is to be done by conjoining with other measures nutritious food. Has improvement in this direction reached its limit? Is the extent to which alimentation should enter into the management of diseases, fully appreciated? Let us see if there be not ground for answering these questions in the negative.

Limiting attention to acute diseases, it is now generally understood that they do not stand in the way of dying from starvation. Graves uttered a literal fact when he said that patients with continued fever, treated without nourishment, may be starved to death. And this fact is equally applicable to other acute diseases. That a fatal result may take place, and not infrequently has taken place, not from an existing acute disease *per se*, but from inanition, will not be denied. Now it is only an extension of this fact to say that more or less of the morbid phenomena pertaining to the progress of acute diseases are due to a suspension or impairment of the processes involved in nutrition. If patients affected with acute diseases may die from inanition, the latter must play an important part in the production of the phenomena manifested in connection with the diseases; and this must be true of cases which end in recovery as well as of those which terminate fatally. Deficiency of assimilation originates the symptomatic phenomena, in acute diseases, to a greater or less extent, and here is a source of danger in a greater or less degree. In other words, the symptoms which represent the condition of a patient affected with an acute disease, spring, in part, directly from the disease, and partly from the want of appropriation of fresh supplies for nutrition. Innutrition, in a pathogenetic point of view, has not been sufficiently considered. There is reason to believe that it forms a constant, and often a very important element of all acute diseases; and the practical bearing of this fact is of great importance.

It is fair to assume that the effects produced in a healthy person by withholding food, may also result from the want of nourishment in disease. If starvation be not less fatal in the latter case than in the former, the morbid phenomena, it may be reasonably supposed, are essentially the same in both cases. In order, therefore, to judge of the extent to which the symptoms of disease are attributable to innutrition, the clinical study of starvation in health is important. Experimental observations in inferior animals are not altogether satisfactory in consequence of the difficulty of appreciating certain symptoms. Nor are the instances of human beings starved from necessity, as in shipwreck, suited to the purpose, because the effects of the want of food are mixed with the moral influences incident to their situation, and, moreover, in such instances, generally, there is a deprivation of water as well as food. Experiments voluntarily made are to be preferred; and of these the best to which I am able to refer are those made by Hammond, to establish the relative nutritive value of albumen, starch, and gum.[1] Subjecting himself to the trial of restricting his diet to these alimentary principles singly, Hammond found that they were incapable of supplying the wants of the system, and that the two latter were absolutely innutritious. During each experiment certain phenomena were produced. Now, these phenomena, for the most part, certainly were not produced by the alimentary principle taken, but resulted from the absence of other alimentary principles, or in other words, from innutrition. These experiments, therefore, may be taken as illustrative of the morbid effects of starvation, effects occurring in disease as well as in health. In this point of view they are not only interesting, but of great value. Referring the reader to the essay for fuller details, I will simply mention the symptoms entering into the concise descriptions by the experimenter.

1. Under a diet consisting of pure albumen for ten days: Febrile movements, heat and dryness of skin, headache, loss of appetite, nausea, abdominal pains, progressively increasing debility, serous diarrhœa, want of sleep.

2. Under a diet of pure starch for ten days: Debility, disturbed sleep, sense of oppression of chest, palpitation, headache, slight scratches of the skin showing tendency to inflammation and suppuration, febrile movement, abdominal pains.

---

[1] *Vide* Physiological Memoirs, by Wm. A. Hammond, M.D., Surgeon-General U. S. Army, etc., 1863.

3. Under a diet of gum, which he was able to continue only for four days: Abdominal pains, disturbed sleep, headache, febrile movement, diarrhœa.[1]

Can it be doubted that these symptoms occur under similar conditions as regards diet, in the course of disease? And, if so, how often are these symptoms, presenting themselves in the course of disease, referable, measurably or entirely, to innutrition? I cannot dwell upon these inquiries. I must leave them, reiterating the belief that, while under erroneous views physicians have been accustomed to regard the ingestion of nutritious food during the course of acute diseases as fraught with evil results, more or less of the morbid phenomena supposed to belong directly and exclusively to the existing disease, proceed from defective assimilation.

The practical conclusion based on the statement just made is obvious. It is an object in the management of acute diseases not to withhold nutriment, but to promote the assimilation of nutritious supplies. In many diseases this is *the* great object in the management, taking precedence of any known curative remedies. The object always exists, but the extent to which it can be accomplished varies according to the nature and seat of the disease, together with a host of incidental circumstances. The object is the basis of a principle which may be laid down as applicable to the treatment of all acute diseases, namely, alimentation is important to the fullest practicable extent. It is always desirable for a patient affected with any acute disease to take as much food, embracing a proper variety of alimentary principles, as will be appropriated. Inconvenience and evil results may doubtless follow the ingestion of aliment beyond the powers of digestion and assimilation; but the risk of injury from this source, with the exercise of a fair amount of prudence, is less than the liability of harm if, from an excess of caution, the patient suffer from starvation. The minds of physicians have been too exclusively directed to the harm which may possibly be done by overfeeding in acute diseases, and they have overlooked the greater harm of failing to furnish supplies which may be digested and assimilated notwithstanding the existence of disease.

---

[1] For a full account of the effects of starvation on the different organs and functions, and for references to the literature of this subject, the reader is referred to the *Cours de Physiologie*, par P. Bérard, tome premier, pages 517 *et seq.* The following quotation, by this author, from Chossat, embraces a fact which has been to a great extent overlooked: "*L'inanition est une cause de mort qui marche de front et en silence avec toute maladie dans laquelle l'alimentation n'est pas à l'état normal.*"

A wide field is opened up by the practical application of this principle. It involves the encouragement of a desire for food instead of the discouragement caused by needless apprehensions. The desire for food may often be developed by judicious contrivances; the appetite may be fostered, on the one hand, or, on the other hand destroyed by circumstances connected with the selection, preparation, and administration of articles of diet. Giving medicines too frequently, and the use of nauseous or nauseating remedies, may do harm by compromising the desire for food and appetite, which their remedial effects will not compensate for. The mental condition may conflict with a disposition to take food, when, if taken, it will be digested and assimilated; this is true of the continued fevers, and other diseases accompanied by a typhoid state. In such cases food is to be given without regard to the desire or appetite; the condition of the digestive organs, and the results of experience from day to day, are of course to be considered. These are some of the numerous circumstances affecting alimentation as a measure of management in acute diseases. I must content myself with this allusion to them. But in passing from this topic, a word or two with regard to the diet of hospitals. This is generally determined by the supposed wants of the system, without much reference to the choice or wishes of the patient. How much good might be done by selecting, preparing, and serving food to hospital patients with a view, not alone to the requisite amount and variety of nutritive material, but to develop, encourage, and satisfy desire and appetite! I have often thought if I had unlimited control of the culinary department of a hospital, I would willingly submit to a proportionate curtailment of the articles pertaining to the dispensary.

I cannot find space even to touch upon the various practical points pertaining to the kinds of food suited to the diverse circumstances incident to different diseases; and I will only add, lest some of my readers may imagine what I have written on the dietetic management of acute diseases to be purely speculative, that the views now presented are based not only on reasoning believed to be sound, but on considerable experience. This experience would have been larger were it not that traditional ideas fixed in the public mind, as well as still prevailing in the profession, render it difficult often to carry out an efficient plan of alimentation in private practice; and in hospitals this part of the treatment is limited by circumstances which the physician cannot control. Prejudices, professional and popular, against air and water in the management of acute diseases, prevailed until within a recent period, and are by no means now obsolete. The antipathy to feeding patients will in time appear as absurd as to deny drink and disregard ventilation.

The foregoing remarks have had reference to diet in acute diseases. The importance of ample alimentation in chronic affections is better appreciated, but there is room here for further improvement. I shall content myself here with a maxim of conservative medicine, quoted from my first essay on this subject: "Under all circumstances, a chronic affection is less likely to be prolonged, serious lesions of structure are less likely to take place, and a fatal termination is postponed in proportion as the vital powers are preserved." I need not stop to argue that the vital powers are to be preserved by a nutritious diet conjoined with other hygienic measures.

I have just now alluded to *air* as an element of hygiene in disease. Of the various hygienic conditions, perhaps, to none has attention been more directed, of late years, than a sufficiency of breathing-space and adequate ventilation. There is room, however, for the inquiry whether improvement here has reached its limit. Granting the largest estimate of cubic feet, and the best contrivances for the renewal of the air of the ward or sick-room, there is reason to think that additional influences pertaining to the atmosphere may be brought to bear with advantage on the management of diseases. During the civil war in this country it has been repeatedly observed that the wounded have done better in the open air, exposed to deprivations and vicissitudes of weather, than after having been received into houses or hospitals containing every provision for comfort. Surgeons have found that the most effectual mode of arresting hospital gangrene is to transfer patients at once to tents, and the rapidity of improvement in the latter situation is remarkable. Now, the question arises, may not out-of-door exposure, or what is equivalent thereto, be useful in many acute diseases? Its usefulness in chronic affections is acknowledged. This question is worthy of consideration with a view to experimental observation. It would not be surprising if patients affected with fevers and acute inflammations were found to improve in a notable degree under the freest possible exposure to air. As to the choice between such exposure and insufficiency of space and ventilation, there is, of course, no question. There are facts enough bearing on this point. But the question is whether such exposure may not be advantageously added to the observance of the usual sanitary requirements respecting air. Free and daily exposure is important as a means of preserving the vigor of the body in health; may it not be equally important as a means of keeping up the vital powers in disease? Every one accustomed to spend much time in hospital wards, must be aware of the sense of debility felt after remaining there for even two or three hours. How different the feeling after having been in the open air for the same period! How would the strength and energy of mind and body flag, if an active, healthy man were confined for successive days and weeks to an apartment with the air sufficiently renewed to preserve its purity, but kept steadily at a uniform warm temperature! How refreshing would be cool breezes and alternations of heat and cold after such a confinement! Do not these facts apply to the body and mind in disease as well as in health? As a general rule, the hygienic circumstances required by conservatism in health, are not less important in disease; and it is at least highly probable that, as respects the depressing effects of confinement in heated rooms on the one hand, and the invigorating effects of free exposure to air on the other hand, sanitary laws are applicable alike to disease and health.

As bearing indirectly on this topic, I may refer to instances of persons passing safely through fevers and acute inflammations, in situations in which they are necessarily exposed to atmospherical vicissitudes. For example, I have reported a case of pneumonia affecting one entire lung, the patient living entirely alone in a shanty, in the winter season, in Louisiana; the shanty in a swamp, the floor of earth covered with water; his subsistence consisting of bread and water with a bottle of whisky, and the evacuations passed in bed. The patient was discovered and removed from this situation to the Charity Hospital of New Orleans already convalescing, and he rapidly recovered. I have known a patient affected with pneumonia escape from the ward in a state of delirium during the night in the winter season, wearing only a cotton shirt, and walk a distance of two miles to a house where he had formerly lived. He was brought back to the hospital the next day, free from delirium, and he convalesced rapidly, having received no detriment from this great amount of exposure and exertion. Examples analogous to these occasionally fall under the observation of all practitioners. They show, at least, that prevailing apprehensions of danger from exposure to atmospheric influences, during the progress of acute diseases, are much exaggerated. This remark will apply to early gestation in convalescence from acute diseases. It was formerly supposed that most acute diseases left behind them a liability to relapse, or a condition favorable for the development of other affections; and, therefore, that great care must be taken to avoid all exertion, and especially the morbific agency imputed to cold. A better knowledge of the natural history of diseases has taught us that, as a rule, there is little or no tendency to relapse, and that the sequels of certain diseases proceed from intrinsic tendencies. Of the hygienic circumstances favoring rapid and complete restoration to health, getting up as soon as the strength will permit, and gentle exercise in the open air, are among the most efficient. I could cite illustrations of this fact in abundance. As I am writing, a striking instance comes to my mind of a fellow-practitioner who had kept the bed for a long time with chronic pleurisy, accompanied with great debility and emaciation, and, finally, bed-sores were added to his sufferings. At this juncture he was taken out of bed, placed in a carriage, and driven a short distance. The effect on body and mind was such that the experiment was repeated. He continued to ride out daily, and rapidly recovered. This was many years ago; he is now in good health and in active practice. Here is a striking instance among many exemplifying the hygienic importance of air and exercise in determining convalescence and promoting recovery.

Are the requirements of conservatism fully met by a due appreciation of all that pertains to mental hygiene in disease? This question will lead to a few remarks which will conclude my brief consideration of conservatism as applied to hygiene in disease. Physicians are not unmindful of the reciprocal influences of mind and body. It would be trite to assert their existence and importance. They are patent to every medical observer. But it is perhaps true that mental conditions are more largely concerned in either favoring or antagonizing disease than is generally supposed; and hence, that the therapeutic value of hygienic influences acting primarily on the mind, are not sufficiently appreciated.

It is obvious that the capacity of resisting and recovering from disease varies in different persons. The same disease, having apparently the same intensity, will destroy some and not others. And there is a wide difference as regards the duration of life with a similar amount of incurable lesions. Take, for example, pulmonary tuberculosis, how great the diversity in the extent of destruction of the lungs in cases in which this disease alone has produced death! Now this intrinsic power of overcoming disease, and of living on with irremediable affections which will sooner or later prove fatal, is not altogether vital but in part mental. If the faculties of the mind be not impaired or obscured by disease, the patient is rarely indifferent to its progress or the result; it is accompanied by more or less emotional activity. Much, often very much, depends on the character of the predominant emotions. Hope, confidence in the physician and the means of cure, reliance on the wisdom of Divine Providence, are sentiments which sustain the vital powers and are conservative. On the other hand, discouragement, apprehensions, dissatisfaction, impatience, depress the vital powers and are non-conservative. The character of the predominant emotions will, of course, depend in a great measure on mental constitution, education, habits of thought and feeling, etc., with reference to which there is nothing like uniformity in different persons; but judicious management on the part of the physician may determine their character to a greater or less extent. The ability to secure complete confidence, to exert an influence over the minds of patients, enhances, in no small degree, the skill of the physician. As belonging legitimately to the practice of medicine, this is not enough considered. But the skilful exercise of a moral power requires accuracy of diagnosis and knowledge of the laws of disease. If the physician be not able to judge correctly of the situation of a patient, he cannot give the assurances which the nature of the case may warrant; prudence, as regards his own reputation, dictates great reserve, and he depresses his patient by non-committalism. In a dispensary practice limited to affections of the chest, I have been forcibly impressed with the good which may be done in many cases by simply declaring *ex cathedrâ* the absence of consumption or an affection of the heart. Poor patients, after having perhaps suffered long from secret apprehension of serious disease, come tremblingly, at length, as if to hear their doom pronounced. Thanks to the invaluble methods of physical diagnosis, the healthy state of the thoracic organs may be positively ascertained. How delightful to witness the transition from despondency to joy, when soundness of the suspected organs is announced and believed! The moral effect is often of more efficacy than any medicinal remedy. It would be easy to cite numerous instances of mental suffering with physical disorder persisting many years for the lack of an authoritative assurance of the non-existence of a fatal malady.

It does not enter into my plan to discuss the various means by which mental influences may be brought to bear on the management of diseases. I wish only to bring forward the fact that here is an important province of conservative medicine. A topic suggests itself in this connection which I will not pass by, because it relates to a matter concerning which the opinions and conduct of medical men differ: I refer to the co-operation of the clergy in cases of disease. Some physicians take the position that during the progress of diseases involving danger to life, the ministrations of religion are liable to interfere with recovery by producing excitement and discouragement. I desire to bear testimony against this position. Divesting the topic of all considerations save those which relate to the influence upon the progress of the disease, experience has led me to have no fear of harm from the timely and judicious offices of clergymen and religious friends. On the contrary, the effect is often manifestly salutary.

If the mental faculties remain intact, every patient must think of the probability or possibility of an existing disease ending fatally. There can be no stronger evidence of an imbruted mind than the absence of all thought of danger. And the doubt, uncertainty, and anxiety engendered by the patient's reflections occasion a more depressing effect than even a definite expectation of a fatal result. Every physician knows how common it is to be entreated by the patient to make known to him his actual condition, to tell him the worst, a painful state of suspense with respect to death, as well as any event involving a deep personal interest, being more difficult to bear than its anticipation. For this reason, although a certain amount of reserve may be allowable, the physician should, as a rule, meet the demands of the patient for explicit information with candor, and he should never violate the truth. The most favorable condition of mind, in a hygienic point of view, is that induced by confidence and hopefulness in union with a cheerful resignation to the will of God. In so far as the services of the minister of religion conduce to the latter, he becomes the coadjutor of the physician. Irrespective of life and health, this topic has relations to momentous interests which would be here out of place, even if the writer were presumptuous enough to consider them. I wish simply to record the opinion, as a physician having had considerable opportunity for observation, that so far from there being any ground for antagonism, the minister of religion may effectively co-operate with the medical practitioner in behalf of the physical welfare of the sick.

Attention to mental hygiene in hospitals often falls short of the requirements of conservatism. The violations of conservatism, in this regard, consist, in the first place, of circumstances which tend to depress the vital powers by their influence on the mind, and, in the second place, in the absence of circumstances influencing the mind in an opposite direction. Obvious sources of a depressing influence are apt to be overlooked. One of these is the necessity of witnessing the distressing manifestations of disease in other cases in the same ward. Cases which, from their character, shock or painfully excite the feelings, should, as far as possible, be isolated. To be confined in the same apartment, or, perhaps, to lie side by side with patients in a state of active delirium, or affected with convulsions, or in stertorous coma, or suffering extreme pain, is to be exposed to a depressing influence which one can best appreciate by imagining himself in such a situation. It is melancholy to think that a brutish insensibility is often the only resource against this influence. It is cruel to compel hospital patients to witness the phenomena of the dying act. How often have I seen the most marked evidence of the unfavorable effect of a prolonged agony in a hospital ward! If it be true that the patients may become habituated to these scenes, so as to regard them with indifference, is this a result to be desired! The propriety of assigning wards to tuberculous cases, or to incurable diseases, is more than doubtful as a measure of mental hygiene. What can be more discouraging to a tuberculous patient than to be surrounded with cases presenting all the different phases and gradations of consumption? For this reason consumptive hospitals are objectionable.

The circumstances just referred to may not be under the control of physicians connected with hospitals; but there are circumstances for which medical officers and visitors are exclusively responsible. It is very rarely the case that hospital patients are treated cruelly, roughly, or neglectfully; but the fact of their having the same faculties of thought and the same sensibilities as private patients, is not always sufficiently borne in mind. If this fact were not sometimes forgotten, the nature of the disease, the prognosis, and the appearances which may be expected to be found after death, would never be discussed without reserve at the bedside of a patient; the chances of recovery or death in the cases under observation, the incidents of the dead house, and other topics of a like character, would not enter into conversations held in the wards. It is but just to say that such breaches of conservatism are by no means common, and that when they do occur they proceed generally from the thoughtlessness incident to youth and preoccupation.

There is room for improvement as regards mental hygiene in hospitals, not only by obviating circumstances which exert a depressing influence, but by trying to call into exercise thoughts and feelings which have a salutary effect in disease. It is a great charity to institute for the sick poor places of refuge, furnishing shelter, nourishment, nursing, and medical aid; and for many of the miserable candidates for such a charity, a hospital ward offers comforts far beyond those to which they have been accustomed. But supplying these needs does not fulfil all the requirements of relief; sympathy, encouragement, and religious ministrations may be added with advantage in a sanitary point of view, irrespective of other and higher objects. For this part of the hygienic management the physicians must depend in a great measure on others. And here is a field for philanthropic labor which lacks husbandmen. How few of the many who are earnest to benefit their fellows think of the sick and friendless poor in hospitals, where, by judicious words and offices of kindness, they might reap a harvest of good works, of which least in importance, although important, is the favorable influence on the course of disease! But I am entering on a train of thought which, for the medical reader, offers nothing new and is not called for, and I therefore here rest my remarks on hygiene in disease.

With this essay I take leave of the subject of *Conservative Medicine*. In my first essay I endeavored to show that the term conservatism expresses the great feature of medicine of the present time, and a governing principle in medical practice. In my second essay I considered the principle of conservatism as applied to therapeutics. In this third essay I have offered a few fragmentary thoughts on the application of this principle to hygiene. With the rise and progress of conservatism we see a great, almost a radical change in practical medicine. This change is a legitimate result of the progress of knowledge. It is not to be expected that medicine is to be stationary; unchangeableness is incompatible with progress. There must be changes if medicine be progressive. Bearing in mind these truths, it is the part of every true physician to try to keep pace with the advancement of the profession.

IV.

MEDICINE IN THE PAST, THE PRESENT, AND THE FUTURE.[1]

TO consider the present in comparison with the past, and in anticipation of the future, is a grand prerogative of the human intellect, as contrasted with the mental endowments of the inferior races of created beings. Man alone brings to bear upon the thoughts and acts of individual life the experience of generations which have passed, and man alone undertakes to foresee the events of generations which are to come. Among the highest, the most attractive, and the most useful of studies, are those which consider the different branches of existing knowledge in their retrospective and prospective relations. A just appreciation of the present state of human progress in science, in art, or in social life, is to be based on a comparison of the present with the past, and a rational foresight of developments which are hereafter to mark this progress must rest on the same basis.

With these truisms I introduce the subject of my discourse on this occasion. I shall offer some observations concerning *medicine in the present, the past, and the future.* In announcing a subject of such wide scope, let me make haste to forestall certain apprehensions which it will be likely to awaken, by saying that, as regards he past, my range will extend only to a period within he memory of those who are not among the younger, nor yet among the oldest, of the living members of the medical profession; and, as regards the future, I shall forego indulgence in elaborate prophetic visions. My observations, moreover, will be confined to medicine proper, that is, to medicine in contradistinction to surgery. With these restrictions, a discourse discreetly limited in length can take in but a few of the topics which the subject suggests, and these must be considered in a desultory manner.

---

[1] An Anniversary Discourse before the New York Academy of Medicine.

Let a physician, whose reminiscences extend to the close of the first quarter of the nineteenth century, take this date as a standpoint, and institute a comparison of the present with the past.

Human anatomy, as regards "gross appearances" (a phrase which, had it then been in use, would have had little significance), offers not many striking points in contrast. The descriptions of organs, in the anatomical treatises then in use, would answer well for the medical student of to-day. Up to that date the term *anatomy* needed no prefixes denoting subdivisions of the study. The names *special* and *descriptive* came into use after the creation of *general anatomy* by Bichat. The student of anatomy, prior to the date of which I am speaking, as compared with the student of the present day, had an easy task. Not only were treatises less portentous in bulk, but their authors by no means adhered to dry anatomical details; the functions of organs were treated of, and the student was diverted with excursions into the fields of medical practice and operative surgery. The analytical study of organs, resolving them into their component tissues, was a memorable epoch in medicine. The voluminous treatise on general anatomy by Bichat has become obsolete; but it gave an impulse and a direction to researches, not alone in pure normal anatomy, but in morbid changes and processes, and paved the way to the more recent developments, with the aid of the microscope, which have added to general anatomy the extensive and fruitful territory of Histology. Histological researches have carried observation beyond the elementary tissues of Bichat to the "anatomical elements" into which these tissues are resolvable. So great and important an advance in this direction has been made within the last few years, that one who has lately entered upon anatomical study must find it difficult to appreciate the enthusiasm which, a little more than thirty years ago, led an eminent medical teacher in our country to say that the "General Anatomy" of Bichat was a "revelation in medicine." But for one whose professional reminiscences extend to the date of the publication of Bichat's works in our language, it is not easy to forego the desire to linger in admiration of the genius and industry which achieved, at the age of thirty-two, the honor of being styled the "father of general anatomy."

The present, thus, in medicine, as compared with the past, dating from the labors of Bichat, is characterized by the acquisition of a vast and important territory in anatomy, extending from the boundaries of the unaided vision over a space the limits of which are yet to be defined. The importance of this new territory relates by no means exclusively to our knowledge of the normal organization of the body, but also to pathological histology and to the bearing of anatomical developments by the microscope on our knowledge of physiological and pathological processes. The progress thus made in anatomy required its disseverance from other departments of medical study, and its subdivision into distinct branches, namely: 1. The description of organs, constituting special or descriptive anatomy; 2. The description of the tissues and of the anatomical elements in health, embracing normal histology; 3. The gross and microscopical character of disease, or morbid anatomy, embracing pathological histology. Each of these subdivisions now claims in bibliography separate and voluminous treatises. As an illustration of the contrast, in this point of view, between the present and the past, the French translator of Meckel's Anatomy (the American translation of which appeared in 1831) announces in his preface that this work comprises "all the important facts of general, descriptive, and pathological anatomy, and of physiology!"

Turning from anatomy to the study of the processes which take place within the body in health and in disease; that is, to physiology and pathology, provinces of medicine conventionally reckoned as distinct, but, in reality, parts of one dominion, and taking the same standpoint, let us briefly notice some contrasts here between the present and the past.

At the end of the first quarter of the present century, the great discovery, by Magendie and Bell, of distinct nervous fibres for sensation and motion, was in the process of adoption, and the discovery of the excito-motor or reflex functions of the nervous system had not been made. Think of the practice of medicine without these discoveries, justly compared, in importance, with the discovery of the circulation of the blood! Beaumont began his experiments in the case of Alexis St. Martin in 1825, and the results were not given to the profession until 1833. Physiologists had concluded that the active agent in digestion was a fluid, because food contained in linen bags, and perforated metallic balls, which animals were made to swallow, was found to be digested, and John Hunter had discovered post-mortem digestion of the stomach; but the physical and chemical properties of the gastric juice had not been ascertained, the digestive power of this secretion when removed from the stomach had not been observed, and the comparative digestibility of different articles of diet had not been brought under direct observation. Magendie had entered upon the vivisections, the results of which entitle him to be called the "father of modern experimental physiology," meeting with distrust and ridicule, both from within and without the profession, and, on the plea of needless cruelty, with an opposition which certain of the pseudo-humanitarians of this day are not ashamed to continue notwithstanding the use of anæsthetics which were unknown in Magendie's time; but the withdrawal of the contents of the alimentary canal, and of the products of internal glands, by means of permanent fistulas, was reserved for a later period. Digestion was supposed to be exclusively a function of the stomach; the digestive power of the intestinal juice, together with the bile and pancreatic secretion, was unknown. The enormous quantity of fluids secreted for digestion was not dreamed of. Even now it is difficult to realize the statement that the quantity of digestive fluids secreted per diem exceeds the whole mass of blood, and equals one-seventh of the weight of the body! Venous absorption was not acknowledged. Little was known of osmosis. The products of digestion were supposed to be taken up exclusively by the lacteals, which, it was imagined, had open mouths endowed with a kind of intelligent faculty of election. The production of excrementitious substances in the tissues, their presence in the blood, the office of certain glands being for their separation, and not for their formation, are facts, having very important bearings on pathology and practice, which have only within late years been demonstrated.

Passing to pathology and practical medicine, classical authorities at the date selected for our comparison of the present with the past were, Gregory's Practice, Thomas's Practice, and the elaborate "Study of Medicine," by John Mason Good. They, whose retrospections extend to the time when the five volumes of Good's "Study of Medicine" were to be read by the medical student, will not have forgotten how agreeable was the task. The comprehensive scope of the work is set forth in the preface, in which the object is stated to be "to unite the different branches of medical science into a general system, so that the whole may be contemplated under a single view and pursued under a common study." "These branches," the author continues, "are the following: 1. Physiology, or the doctrine of the natural action of the living principle; 2. Pathology, or the doctrine of its morbid action; 3. Nosology, or the doctrine of the classification of diseases; 4. Therapeutics, or the doctrine of their treatment and cure." The completeness of the classification, the classical nomenclature, the "physiological proems," the erudition, the interesting episodes and curious incidents together with the attractive style of composition, rendered this work not less charming than instructive.

There were "Brunonians" in those days; and soon afterward came Broussais, the founder of another sect, undertaking, like Brown, to reduce pathology and practice to a simple formula, both starting from substantially the same theory, but reaching systems of practice diametrically opposite; one considering all diseases as asthenic, and requiring stimulants, the other recognizing in most affections, whether general or local, either inflammation or over-excitation, and arguing that they are to be combated by depletion and starvation.

Standard works on practical medicine may be taken as exponents of current doctrines in pathology and therapeutics; and, with successive changes in medical opinions, representative works are pretty sure to be forthcoming. Not going beyond British and American medical literature, text-books which supplanted Gregory, Thomas, and Good, were the fascinating and in all respects admirable lectures by Watson, the treatises by Eberle, Hosack, Dunglison, Elliotson, and the "Cyclopædia of Practical Medicine." A quarter of a century is a long life for a text-book in medicine; but "Watson's Practice" has reached this longevity, still retaining not a little of the freshness of youth. At the present time, this province of medical bibliography is occupied by several recent works, whose authors aim to represent more fully than those just named, the existing state of pathology and practice; and it is to be hoped that henceforward the real progress of medical knowledge may render these works more short-lived than their immediate predecessors. Let us now glance at some of the more important of the changes, pathological and practical, which have taken place during the second and third quarter of the present century.

In this retrospection auscultation first claims notice. Laennec, it is true, published his great work on mediate auscultation in 1819, and it was translated by Forbes in 1821. Before its publication, a commission, appointed by the Academy of Medicine in Paris (composed of three members whose names are now comparatively unknown), had reported, in substance, that, although this method of exploration was by no means a new discovery, inasmuch as many observers, even Hippocrates, had listened to sounds emanating from the chest, yet, the labors of M. Laennec were highly creditable, and might prove of practical value! The merits of auscultation were not, in fact, appreciated, save to a very limited extent, for several years after the death of Laennec in 1826. It is only within the last few years that there have not been many who were not ashamed to sneer at the stethoscope. In 1836 a writer in a popular magazine said of it, "The toy is a new toy;"[1] and in the same year the Boylston medical committee of Harvard University offered a question for a prize essay in the following terms: "How far are the external means of exploring the condition of the internal organs to be considered useful, and important in medical practice," the successful competitor being Oliver Wendell Holmes. Percussion, the elder brother of Auscultation, the difference in their ages being over half a century, had died almost at birth, and was disinterred by Corvisart in 1808; but it was not really resuscitated until it became associated with auscultation. Need I ask how unsatisfactory would be the practice of medicine were the profession to be deprived of these methods of direct exploration? The use of the speculum was among the "lost arts," and its revival did not take place for many years after auscultation and percussion effect in disease. It is a great charity to institute for the sick poor places of refuge, furnishing shelter, nourishment, nursing, and medical aid; and for many of the miserable candidates for such a charity, a hospital ward offers comforts far beyond those to which they have been accustomed. But supplying these needs does not fulfil all the requirements of relief; sympathy, encouragement, and religious ministrations may be added with advantage in a sanitary point of view, irrespective of other and higher objects. For this part of the hygienic management the physicians must depend in a great measure on others. And here is a field for philanthropic labor which lacks husbandmen. How few of the many who are earnest to benefit their fellows think of the sick and friendless poor in hospitals, where, by judicious words and offices of kindness, they might reap a harvest of good works, of which least in importance, although important, is the favorable influence on the course of disease! But I am entering on a train of thought which, for the medical reader, offers nothing new and is not called for, and I therefore here rest my remarks on hygiene in disease.

---

[1] *Vide* Prize Essay, by Oliver Wendell Holmes.

With this essay I take leave of the subject of *Conservative Medicine*. In my first essay I endeavored to show that the term conservatism expresses the great feature of medicine of the present time, and a governing principle in medical practice. In my second essay I considered the principle of conservatism as applied to therapeutics. In this third essay I have offered a few fragmentary thoughts on the application of this principle to hygiene. With the rise and progress of conservatism we see a great, almost a radical change in practical medicine. This change is a legitimate result of the progress of knowledge. It is not to be expected that medicine is to be stationary; unchangeableness is incompatible with progress. There must be changes if medicine be progressive. Bearing in mind these truths, it is the part of every true physician to try to keep pace with the advancement of the profession.

IV.

MEDICINE IN THE PAST, THE PRESENT, AND THE FUTURE.[1]

TO consider the present in comparison with the past, and in anticipation of the future, is a grand prerogative of the human intellect, as contrasted with the mental endowments of the inferior races of created beings. Man alone brings to bear upon the thoughts and acts of individual life the experience of generations which have passed, and man alone undertakes to foresee the events of generations which are to come. Among the highest, the most attractive, and the most useful of studies, are those which consider the different branches of existing knowledge in their retrospective and prospective relations. A just appreciation of the present state of human progress in science, in art, or in social life, is to be based on a comparison of the present with the past, and a rational foresight of developments which are hereafter to mark this progress must rest on the same basis.

With these truisms I introduce the subject of my discourse on this occasion. I shall offer some observations concerning *medicine in the present, the past, and the future.* In announcing a subject of such wide scope, let me make haste to forestall certain apprehensions which it will be likely to awaken, by saying that, as regards the past, my range will extend only to a period within the memory of those who are not among the younger, nor yet among the oldest, of the living members of the medical profession; and, as regards the future, I shall forego indulgence in elaborate prophetic visions. My observations, moreover, will be confined to medicine proper, that is, to medicine in contradistinction to surgery. With these restrictions, a discourse discreetly limited in length can take in but a few of the topics which the subject suggests, and these must be considered in a desultory manner.

---

[1] An Anniversary Discourse before the New York Academy of Medicine.

Let a physician, whose reminiscences extend to the close of the first quarter of the nineteenth century, take this date as a standpoint, and institute a comparison of the present with the past.

Human anatomy, as regards "gross appearances" (a phrase which, had it then been in use, would have had little significance), offers not many striking points in contrast. The descriptions of organs, in the anatomical treatises then in use, would answer well for the medical student of to-day. Up to that date the term *anatomy* needed no prefixes denoting subdivisions of the study. The names *special* and *descriptive* came into use after the creation of *general anatomy* by Bichat. The student of anatomy, prior to the date of which I am speaking, as compared with the student of the present day, had an easy task. Not only were treatises less portentous in bulk, but their authors by no means adhered to dry anatomical details; the functions of organs were treated of, and the student was diverted with excursions into the fields of medical practice and operative surgery. The analytical study of organs, resolving them into their component tissues, was a memorable epoch in medicine. The voluminous treatise on general anatomy by Bichat has become obsolete; but it gave an impulse and a direction to researches, not alone in pure normal anatomy, but in morbid changes and processes, and paved the way to the more recent developments, with the aid of the microscope, which have added to general anatomy the extensive and fruitful territory of Histology. Histological researches have carried observation beyond the elementary tissues of Bichat to the "anatomical elements" into which these tissues are resolvable. So great and important an advance in this direction has been made within the last few years, that one who has lately entered upon anatomical study must find it difficult to appreciate the enthusiasm which, a little more than thirty years ago, led an eminent medical teacher in our country to say that the "General Anatomy" of Bichat was a "revelation in medicine." But for one whose professional reminiscences extend to the date of the publication of Bichat's works in our language, it is not easy to forego the desire to linger in admiration of the genius and industry which achieved, at the age of thirty-two, the honor of being styled the "father of general anatomy."

The present, thus, in medicine, as compared with the past, dating from the labors of Bichat, is characterized by the acquisition of a vast and important territory in anatomy, extending from the boundaries of the unaided vision over a space the limits of which are yet to be defined. The importance of this new territory relates by no means exclusively to our knowledge of the normal organization of the body, but also to pathological histology and to the bearing of anatomical developments by the microscope on our knowledge of physiological and pathological processes. The progress thus made in anatomy required its disseverance from other departments of medical study, and its subdivision into distinct branches, namely: 1. The description of organs, constituting special or descriptive anatomy; 2. The description of the tissues and of the anatomical elements in health, embracing normal histology; 3. The gross and microscopical character of disease, or morbid anatomy, embracing pathological histology. Each of these subdivisions now claims in bibliography separate and voluminous treatises. As an illustration of the contrast, in this point of view, between the present and the past, the French translator of Meckel's Anatomy (the American translation of which appeared in 1831) announces in his preface that this work comprises "all the important facts of general, descriptive, and pathological anatomy, and of physiology!"

Turning from anatomy to the study of the processes which take place within the body in health and in disease, that is, to physiology and pathology, provinces of medicine conventionally reckoned as distinct, but, in reality, parts of one dominion, and taking the same standpoint, let us briefly notice some contrasts here between the present and the past.

At the end of the first quarter of the present century, the great discovery, by Magendie and Bell, of distinct nervous fibres for sensation and motion, was in the process of adoption, and the discovery of the excito-motor or reflex functions of the nervous system had not been made. Think of the practice of medicine without these discoveries, justly compared, in importance, with the discovery of the circulation of the blood! Beaumont began his experiments in the case of Alexis St. Martin in 1825, and the results were not given to the profession until 1833. Physiologists had concluded that the active agent in digestion was a fluid, because food contained in linen bags, and perforated metallic balls, which animals were made to swallow, was found to be digested, and John Hunter had discovered post-mortem digestion of the stomach; but the physical and chemical properties of the gastric juice had not been ascertained, the digestive power of this secretion when removed from the stomach had not been observed, and the comparative digestibility of different articles of diet had not been brought under direct observation. Magendie had entered upon the vivisections, the results of which entitle him to be called the "father of modern experimental physiology," meeting with distrust and ridicule, both from within and without the profession, and, on the plea of needless cruelty, with an opposition which certain of the pseudo-humanitarians of this day are not ashamed to continue notwithstanding the use of anæsthetics which were unknown in Magendie's time; but the withdrawal of the contents of the alimentary canal, and of the products of internal glands, by means of permanent fistulas, was reserved for a later period. Digestion was supposed to be exclusively a function of the stomach; the digestive power of the intestinal juice, together with the bile and pancreatic secretion, was unknown. The enormous quantity of fluids secreted for digestion was not dreamed of. Even now it is difficult to realize the statement that the quantity of digestive fluids secreted per diem exceeds the whole mass of blood, and equals one-seventh of the weight of the body! Venous absorption was not acknowledged. Little was known of osmosis. The products of digestion were supposed to be taken up exclusively by the lacteals, which, it was imagined, had open mouths endowed with a kind of intelligent faculty of election. The production of excrementitious substances in the tissues, their presence in the blood, the office of certain glands being for their separation, and not for their formation, are facts, having very important bearings on pathology and practice, which have only within late years been demonstrated.

Passing to pathology and practical medicine, classical authorities at the date selected for our comparison of the present with the past were, Gregory's Practice, Thomas's Practice, and the elaborate "Study of Medicine," by John Mason Good. They, whose retrospections extend to the time when the five volumes of Good's "Study of Medicine" were to be read by the medical student, will not have forgotten how agreeable was the task. The comprehensive scope of the work is set forth in the preface, in which the object is stated to be "to unite the different branches of medical science into a general system, so that the whole may be contemplated under a single view and pursued under a common study." "These branches," the author continues, "are the following: 1. Physiology, or the doctrine of the natural action of the living principle; 2. Pathology, or the doctrine of its morbid action; 3. Nosology, or the doctrine of the classification of diseases; 4. Therapeutics, or the doctrine of their treatment and cure." The completeness of the classification, the classical nomenclature, the "physiological proems," the erudition, the interesting episodes and curious incidents together with the attractive style of composition, rendered this work not less charming than instructive.

There were "Brunonians" in those days; and soon afterward came Broussais, the founder of another sect, bers is not found to be too redundant, and not only are anatomy, physiology, and surgery, assigned respectively to separate chairs, but several subdivisions of the medical and surgical departments, or specialties, have their professional representatives in some of the leading colleges.

The practice of medicine, since the date to which our present retrospections extend, has undergone great changes, some of the prominent characteristics of which, briefly stated, are as follows: Active remedies and potent therapeutical agencies are employed with much more reserve and discrimination now than formerly. The importance of economizing and sustaining the powers of life, in both acute and chronic affections, or, as I would term it, "conservative medicine," is much more fully appreciated. The physician of the present day is willing to show his heroism by withholding, even in cases of disease involving imminent danger, active treatment, if he do not see clearly the indications for it, acknowledging, as a governing rule, the duty of avoiding risk of doing harm by therapeutical interference. He is satisfied to admit that, in most cases, his office is to aid in conducting the course of disease to a favorable termination; and he is content with being called an "expectant physician," provided this name be used in its proper signification. The hygienic management, in cases of disease, is much better understood, and its proper rank, as taking precedence, often, over the treatment by drugs, is recognized. Erroneous notions in relation to diet, which formerly prevailed, are passing away, and the necessity of alimentation in disease is far better understood; medicinal preparations are more concentrated, and they are far less nauseous, as well as more auscultation in 1819, and it was translated by Forbes in 1821. Before its publication, a commission, appointed by the Academy of Medicine in Paris (composed of three members whose names are now comparatively unknown), had reported, in substance, that, although this method of exploration was by no means a new discovery, inasmuch as many observers, even Hippocrates, had listened to sounds emanating from the chest, yet, the labors of M. Laennec were highly creditable, and might prove of practical value! The merits of auscultation were not, in fact, appreciated, save to a very limited extent, for several years after the death of Laennec in 1826. It is only within the last few years that there have not been many who were not ashamed to sneer at the stethoscope. In 1836 a writer in a popular magazine said of it, "The toy is a new toy;"[1] and in the same year the Boylston medical committee of Harvard University offered a question for a prize essay in the following terms: "How far are the external means of exploring the condition of the internal organs to be considered useful, and important in medical practice," the successful competitor being Oliver Wendell Holmes. Percussion, the elder brother of Auscultation, the difference in their ages being over half a century, had died almost at birth, and was disinterred by Corvisart in 1808; but it was not really resuscitated until it became associated with auscultation. Need I ask how unsatisfactory would be the practice of medicine were the profession to be deprived of these methods of direct exploration? The use of the speculum was among the "lost arts," and its revival did not take place for many years after auscultation and percussion orator of 1893 presenting numerous illustrations of the imperfections of medical knowledge in 1868; noticing the doctrines of this generation which will then have become obsolete; dilating on the great changes in practice, and citing the comparatively short period which at the present time is devoted to medical pupilage. Should such a foreseeing as this make us dissatisfied with the present state of medicine? Certainly not. All that we can do is to avail ourselves of what is known in our day, as far as practicable, making, as far as lies in our power, a good practical use of the knowledge which we acquire. This much we are bound to do; and, also, we are bound, one and all, according to our opportunities and abilities, to aid in the progress of medicine. Is it a just ground of reproach that the history of medicine will be likely to show in the future, as in the past, great changes? To answer this question affirmatively would be to impugn the wisdom of God. It is in the order of Providence that there should be progressive advancement in medicine as in other provinces of science and art; and all that society and individuals can claim of us, as medical practitioners, is the exercise of our art in accordance with the existing state of the science. An appreciation of the limits of our present knowledge of anatomy, physiology, pathology, the natural history of diseases, and therapeutics, will enable us, in some measure, to apprehend the scope which these branches of medicine offer for further progress. Let us contemplate these several branches of medicine, briefly, in this point of view.

---

[1] *Vide* Prize Essay, by Oliver Wendell Holmes.

It may seem hardly probable, after the study of the body for several years, with the present improved means of microscopical observation, that very important anatomical facts remain to be discovered. Yet, so it seemed at the date in the past which I have selected for a comparison with the present; the *Ultima Thule* of anatomical discoveries was supposed to have been reached when Horner claimed to have discovered the *tensor tarsi* muscle in 1824! It is by no means improbable that the range of minute observation may be extended by means which cannot now be foreseen. Who could have guessed, a few years since, that substances composing the sun and stars would be brought within the compass of direct observation; yet, by means of the spectrum analysis, this wonderful result has been accomplished. It would therefore be unwise to assume that the boundaries of our present knowledge constitute the utmost attainable limits of anatomical research.

Physiology, taking advantage of the microscope and of new developments in chemical science, interrogating Nature by means of experimental observations on inferior animals, and deriving information from the study of disease, opens to the imagination an illimitable space for future progress. With all that has been acquired within the last half-century, how limited is the extent of our actual knowledge! The forces which are involved in the circulation of the blood, independently of the heart's action, are not determined; here is now ample room for discussions and different conjectures. The processes of assimilation, nutrition, secretion, and excretion, constitute still a *terra incognita*. Granting the establishment of the hypothesis which attributes these processes to the action of cells, these are only the agents or organs, the mechanism or *rationale* remaining to be discovered. The functions of the spleen and the other ductless glands are still undetermined. The purposes of the various parts composing the encephalon are very imperfectly known, and the physiological actions involved in sensation, volition, reflex movements, and mental operations, are beyond our present apprehension. The abolition of consciousness in sleep, and the conditions for its existence in waking hours, are mysteries which we cannot begin to comprehend. But it is not necessary to go to the most exalted parts of the organism; let the physiologist undertake to explain the functions of a purely vital organ, for example, the rhythmical actions of the heart, and the limits of our knowledge are not less strikingly illustrated. What will be the physiology of the future no one can surmise, but it is certain that in this direction we have but just begun to penetrate the arcana of Nature.

Turning to pathology, the mysteries relating to morbid processes must needs correspond to those pertaining to the processes of health. What a flood of light, doubtless, would illumine the processes involved in inflammation, morbid products, abnormal growths and alterations of structure, were the physiologist able to unfold the secrets of assimilation, circulation, and nutrition! At present, we must be content with the facts and laws which have been determined by observation, canvassing the merits of theories (like the so-called "cellular pathology") which aim to extend our vision somewhat beyond the horizon bounding our actual knowledge.

Etiology furnishes striking examples of the narrow limits of our present knowledge; and here especially important developments may be looked for in the future. Of certain of the extrinsic special causes of disease, we are entirely ignorant, namely, the miasmas which produce malarious fever, yellow fever, cerebro-spinal meningitis, influenza, epidemic cholera, etc. It has sometimes seemed that we were within grasp of new and important truths; and at this moment such is the conviction of those who believe that organic entities derived from without the body are to be discovered in the blood. One cannot but fervently wish that late efforts to demonstrate the correctness of the doctrine of the animalcular or cryptogamic origin of certain diseases may prove successful, so important would be the consequences of such an advance in etiology. On the other hand, if the zymotic theory of certain diseases be substantiated, much is to be hoped for when our chemical brethren have elucidated the phenomena of catalysis—a name which now seems to serve the same purpose as the phrase "Nature's abhorrence of a vacuum," before the pressure of the atmosphere was understood. Whatever be the nature and sources of the external morbific causes which are now unknown, it is highly probable that discoveries in this direction, sooner or later, will effect great changes in pathology and therapeutics. Reference was made in a former part of this discourse to the knowledge of uræmia acquired within late years. We have an inkling already of other intrinsic causes, namely, uricæmia, cholesteræmia, lacticæmia (if I may coin such a word), and septicæmia. We may consider it quite certain that, with respect to the presence in the blood of morbific principles, produced within and derived from without the body, information is hereafter to be acquired which will bring into striking contrast medicine in the present and the future.

Our present knowledge of the natural history of diseases is very far from complete. Here is ample scope for useful labor. The harvest is abundant, but the laborers are few. It is painful to think of the limited extent to which, in this direction, are utilized the immense clinical resources of this metropolis. If a score of the younger members of the profession in this country, whom Providence has blessed with the means of devoting time to the work, were to follow the example of Louis, they would render to medicine an incalculable service, at the same time securing for themselves a measure of attainment and a professional position which should satisfy a reasonable ambition. A sure career of usefulness and honor is here open to any who, properly qualified by education and practice, and having the requisite intellectual and moral qualifications, are able and willing to spend a series of years in, first, recording cases of disease, and, second, subjecting the accumulated histories to careful analysis and comparison.

What shall be said of the therapeutics of the future? How will the practitioners, at the close of the nineteenth century, treat their patients? What will be the characteristics, on the one hand, of "Young Physic," and, on the other hand, of "Old Fogyism," in that day? It is too much of a flight of the imagination to try to read the future in these aspects; but, judging prospectively from the past, we may indulge in some reflections. It may be reasonably expected that new remedies will be added to the materia medica, for some of those now considered most valuable (*e. g.*, bromine and the bromide salts, the sulphites, the permanganates, and carbolic acid) are of recent introduction. It is fair to conclude that improvements in the preparation and administration of remedies will continue to be made. Statistical researches will have effected more or less progress in the establishment of general principles relating to the management of different diseases. It is not irrational to suppose that our knowledge of the *modus operandi* of many remedies will be hereafter much better understood. A logical inference from the well-known tendency of the mind to opposite extremes at different periods is, that remedies and therapeutic agencies formerly in vogue, but which are now rarely employed, will hereafter come to be more in use. To my mind, for example, it is not a preposterous supposition that our successors, at the end of the present century, will carry lancets; that venesection will not lapse among the "lost arts," but that dexterity in this operation will again resume its former place among the practical accomplishments of the physician. It may be found that injustice to mercury is involved in the insignificant *rôle* which it now has, as compared with the important part assigned to it heretofore in the treatment of many diseases.

These reflections might be multiplied and extended, but I promised, at the outset, not to indulge in elaborate prophetic visions. Let it not be said that speculations respecting the future are vain and fruitless. Reasonable expectations of continued progress will prevent an undue pertinacity of adherence to doctrines to which the mind is once committed, thus saving us from "old fogyism," or from becoming "monumental physicians"—that is, from representing in opinions and practice, not the present, but the past. Such expectations conduce to a state of mind desirable with respect to an aptitude for the acknowledgment of new truth of any kind, more especially if it be of importance in its practical bearing; a state admirably expressed by a quotation which will be familiar to some of my hearers, and which I introduce in this connection with becoming reverence, namely, "a happy mean between too much stiffness in refusing, and too much easiness in admitting, variations in things once advisedly established."[1]

Finally, the consideration of medicine, in the present, past, and future, leads to the reflection that diseases have been appointed by a Divine Providence, for purposes which human reason can now but imperfectly fathom. At some distant period in the world's history, or, if not in this world, in another life, the finite understanding may be able to comprehend fully the wisdom and beneficence which are doubtless exemplified here, not less than in all else affecting human life and happiness. Then it will be seen that the progress made by successive generations, in the science and art of medicine, is in conformity with a plan which can only be understood by knowing the purposes for which diseases have been appointed.

---

[1] Preface to Book of Common Prayer of the Protestant Episcopal Church of the United States of America.

V.

ALIMENTATION IN DISEASE.[1]

CHOMEL, in his admirable treatise on General Pathology, defines the art or the practice of medicine to be the application of good sense to the treatment of diseases. He adds that knowledge of diseases is indispensable, but good sense ranks first in importance. I give the literal translation of the French term, in preference to the phrase "common sense" which is generally used with us, inasmuch as good sense is rather uncommon than common. This definition by Chomel is not less just than striking. The ablest practitioners in the different departments of medicine have always been those who, in addition to an abundance of knowledge, possessed in an uncommon degree good sense. This is as true now as hitherto. How often do practitioners, by no means deficient in medical knowledge, fail in practice because they lack good sense! and, on the other hand, good sense often compensates to a considerable extent for deficiency in medical knowledge. The great improvement which has taken place within the last quarter of a century in the practice of medicine, as regards the employment of remedies, and, still more, the hygienic management of diseases, is due not less to the agency of good sense than to pathological researches. Good sense restrains the formation or adoption of baseless speculations and immature doctrines; it prevents one-sided and extreme views; it opposes alike presumptuous innovations and bigoted conservatism; it keeps within proper bounds reliance upon others and self-reliance, discouraging equally blind partisanship and dogmatic egotism; and, finally, good sense is the true genius of medical experience. With these preliminary remarks I proceed to submit to the good sense of those whom I address some considerations relating to an important subject in practical medicine, namely, *Alimentation in Disease.*

---

[1] Read before the Medical Society of the County of New York.

As conducive to a proper appreciation of the importance of alimentation in disease, the natural history of starvation is to be considered. The immediate effects of starvation are, of course, most rapidly produced and most strikingly manifested when all aliment is withheld. The blood is notably diminished and impoverished; emaciation is rapidly progressive, and death, according to the painful experiments of Chossat on inferior animals, takes place when the body has lost one-fifth or one-fourth of its weight in health. The more obvious phenomena attendant on these immediate effects are as follows: Febrile movement frequently occurs, although the temperature of the body is greatly reduced before death; muscular debility is speedily a marked symptom, and is soon followed by great prostration; the circulation is more and more enfeebled; there is inability to sleep; the moral sentiments are perverted, and, after a time, there is delirium which is sometimes active. and sometimes passive; diarrhœa often occurs, and the breath becomes intolerably fetid. The average duration of life, the complete deprivation of aliment being understood to include water, varies from five to eight days. The mode of dying is typical of slow asthenia or exhaustion. The phenomena are essentially the same, but the duration of life is considerably longer, if water be not withheld.

The phenomena of starvation are not confined to cases in which there is complete deprivation of aliment. This is a fact highly important in its bearing upon alimentation in disease. Starvation is produced whenever the aliment is insufficient, either as regards quantity or quality, for repairing the losses which the blood sustains in supplying to the solids materials for nutrition. The phenomena of starvation are essentially the same as when all nourishment is withheld; the only difference being that they are developed more or less slowly, they are consequently less striking, and their connection with deficient alimentation is liable to be overlooked. Another fact relating to starvation also has an important bearing on alimentation in disease—certain portions of the body may suffer from the want of materials in the blood proper for their nutrition, while other portions of the body are sufficiently nourished. To quote the language of the author of an able essay on "Army Alimentation:" "Starvation is a comparative phrase. We can starve muscle by withholding nitrogen. We can starve the fats of the body, and destroy the animal heat, by withholding carbon. So, too, we can starve the brain by withholding phosphorus; and starve the blood by failing to supply it with those salts of lime, potash, soda, iron and magnesia, which are essential to its healthy condition."[1]

---

[1] Dr. S. B. Hunt, *vide* Sanitary Memoirs of the War of the Rebellion, vol. i, of the series published by the U. S. Sanitary Commission.

orator of 1893 presenting numerous illustrations of the imperfections of medical knowledge in 1868; noticing the doctrines of this generation which will then have become obsolete; dilating on the great changes in practice, and citing the comparatively short period which at the present time is devoted to medical pupilage. Should such a foreseeing as this make us dissatisfied with the present state of medicine? Certainly not. All that we can do is to avail ourselves of what is known in our day, as far as practicable, making, as far as lies in our power, a good practical use of the knowledge which we acquire. This much we are bound to do; and, also, we are bound, one and all, according to our opportunities and abilities, to aid in the progress of medicine. Is it a just ground of reproach that the history of medicine will be likely to show in the future, as in the past, great changes? To answer this question affirmatively would be to impugn the wisdom of God. It is in the order of Providence that there should be progressive advancement in medicine as in other provinces of science and art; and all that society and individuals can claim of us, as medical practitioners, is the exercise of our art in accordance with the existing state of the science. An appreciation of the limits of our present knowledge of anatomy, physiology, pathology, the natural history of diseases, and therapeutics, will enable us, in some measure, to apprehend the scope which these branches of medicine offer for further progress. Let us contemplate these several branches of medicine, briefly, in this point of view.

It may seem hardly probable, after the study of the body for several years, with the present improved means of microscopical observation, that very important anatomical facts remain to be discovered. Yet, so it seemed at the date in the past which I have selected for a comparison with the present; the *Ultima Thule* of anatomical discoveries was supposed to have been reached when Horner claimed to have discovered the *tensor tarsi* muscle in 1824! It is by no means improbable that the range of minute observation may be extended by means which cannot now be foreseen. Who could have guessed, a few years since, that substances composing the sun and stars would be brought within the compass of direct observation; yet, by means of the spectrum analysis, this wonderful result has been accomplished. It would therefore be unwise to assume that the boundaries of our present knowledge constitute the utmost attainable limits of anatomical research.

Physiology, taking advantage of the microscope and of new developments in chemical science, interrogating Nature by means of experimental observations on inferior animals, and deriving information from the study of disease, opens to the imagination an illimitable space for future progress. With all that has been acquired within the last half-century, how limited is the extent of our actual knowledge! The forces which are involved in the circulation of the blood, independently of the heart's action, are not determined; here is now ample room for discussions and different conjectures. The processes of assimilation, nutrition, secretion, and excretion, constitute still a *terra incognita*. Granting the establishment of the hypothesis which attributes these processes to the action of cells, these are only the agents or organs, the mechanism or *rationale* remaining to be discovered. The functions of the spleen and the other ductless glands are still undetermined. The purposes of medicine. The importance of this object in the treatment of individual cases of disease, is to be estimated by the amount of impending danger from starvation as an incidental element. All who hear me are doubtless familiar with the teachings of Graves, with respect to alimentation in the continued fevers. Graves states that he was first led to appreciate the importance of giving nutritious food in cases of fever, by the remark of a shrewd country practitioner, who said that, in his practice, patients generally recovered if he could prevent them from being starved to death. Graves inaugurated a great reform in the treatment of fevers as regards alimentation; and as proof of the strong conviction in the mind of this distinguished clinical teacher of the improvement in practice which dates from his publications, he is said by his co-worker Stokes to have declared that he could desire no better epitaph than, "He fed fevers!" Few, if any, practitioners at the present day, are disposed to undervalue the importance of alimentation in the essential fevers; but it is not less important to prevent, if possible, death from starvation in all other diseases. If to die by slow asthenia be often virtually to starve to death, then, no matter what the disease may be, it is an object of fundamental importance to promote, as far as practicable, the assimilation of food. Looking at the object of treatment in another point of view, it is customary to say that the powers of life are to be supported in proportion to the danger of death by asthenia, whatever be the nature or seat of the disease. Now, of supporting measures, alimentation holds the front rank, not depreciating the importance of stimulants, especially alcoholics, which it is foreign to my present purpose to discuss.

ingitis, influenza, epidemic cholera, etc. It has sometimes seemed that we were within grasp of new and important truths; and at this moment such is the conviction of those who believe that organic entities derived from without the body are to be discovered in the blood. One cannot but fervently wish that late efforts to demonstrate the correctness of the doctrine of the animalcular or cryptogamic origin of certain diseases may prove successful, so important would be the consequences of such an advance in etiology. On the other hand, if the zymotic theory of certain diseases be substantiated, much is to be hoped for when our chemical brethren have elucidated the phenomena of catalysis—a name which now seems to serve the same purpose as the phrase "Nature's abhorrence of a vacuum," before the pressure of the atmosphere was understood. Whatever be the nature and sources of the external morbific causes which are now unknown, it is highly probable that discoveries in this direction, sooner or later, will effect great changes in pathology and therapeutics. Reference was made in a former part of this discourse to the knowledge of uræmia acquired within late years. We have an inkling already of other intrinsic causes, namely, uricæmia, cholesteræmia, lacticæmia (if I may coin such a word), and septicæmia. We may consider it quite certain that, with respect to the presence in the blood of morbific principles, produced within and derived from without the body, information is hereafter to be acquired which will bring into striking contrast medicine in the present and the future.

Our present knowledge of the natural history of diseases is very far from complete. Here is ample scope for useful labor. The harvest is abundant, but the laborers are few. It is painful to think of the limited extent to which, in this direction, are utilized the immense clinical resources of this metropolis. If a score of the younger members of the profession in this country, whom Providence has blessed with the means of devoting time to the work, were to follow the example of Louis, they would render to medicine an incalculable service, at the same time securing for themselves a measure of attainment and a professional position which should satisfy a reasonable ambition. A sure career of usefulness and honor is here open to any who, properly qualified by education and practice, and having the requisite intellectual and moral qualifications, are able and willing to spend a series of years in, first, recording cases of disease, and, second, subjecting the accumulated histories to careful analysis and comparison.

What shall be said of the therapeutics of the future? How will the practitioners, at the close of the nineteenth century, treat their patients? What will be the characteristics, on the one hand, of "Young Physic," and, on the other hand, of "Old Fogyism," in that day? It is too much of a flight of the imagination to try to read the future in these aspects; but, judging prospectively from the past, we may indulge in some reflections. It may be reasonably expected that new remedies will be added to the materia medica, for some of those now considered most valuable (*e. g.*, bromine and the bromide salts, the sulphites, the permanganates, and carbolic acid) are of recent introduction. It is fair to conclude that improvements in the preparation and administration of remedies will continue to be made. Statistical researches will have effected more or less progress in the establishment of general principles relating to the management of different diseases. It is not irrational to suppose that our knowledge of the *modus operandi* of many remedies will be hereafter much better understood. A logical inference from the well-known tendency of the mind to opposite extremes at different periods is, that remedies and therapeutic agencies formerly in vogue, but which are now rarely employed, will hereafter come to be more in use. To my mind, for example, it is not a preposterous supposition that our successors, at the end of the present century, will carry lancets; that venesection will not lapse among the "lost arts," but that dexterity in this operation will again resume its former place among the practical accomplishments of the physician. It may be found that injustice to mercury is involved in the insignificant *rôle* which it now has, as compared with the important part assigned to it heretofore in the treatment of many diseases.

These reflections might be multiplied and extended, but I promised, at the outset, not to indulge in elaborate prophetic visions. Let it not be said that speculations respecting the future are vain and fruitless. Reasonable expectations of continued progress will prevent an undue pertinacity of adherence to doctrines to which the mind is once committed, thus saving us from "old fogyism," or from becoming "monumental physicians"—that is, from representing in opinions and practice, not the present, but the past. Such expectations conduce to a state of mind desirable with respect to an aptitude for the acknowledgment of new truth of any kind, more especially if it be of importance in its practical bearing; a state admirably expressed by a quotation which will be familiar to some of my hearers, and which I introduce in this connection with becoming reverence, of supporting diet, owing to the fact that they contain the requisite variety of alimentary principles combined by the hand of nature. Whenever alimentation is a measure of support, that is, whenever there is danger, either immediate or remote, from starvation, an important rule is to allow always, after food has been given, a sufficient period to judge whether or not it produces disorder of the digestive organs. The intervals should be from three to four hours. If food be given every hour or half hour, as is often done, the organs of digestion have no period of rest, and it is impossible to form any judgment concerning the digestive powers. Moreover, after intervals sufficient to allow of rest, food is more likely to be digested. A grave objection to giving food after very short intervals, is that it involves interference with sleep and occasions both physical and mental annoyance. By allowing sufficient intervals the quantity of food may be graduated to the digestive powers, and thus disorder from over-alimentation avoided.

An important rule of alimentation in fevers and acute diseases, relates to variation in the articles of diet and in the preparation of food. Any article, prepared in a certain mode, and given, without change, day after day, becomes, after a short time, offensive and disgusting. The patient takes it, not merely with indifference or against inclination, but with strong aversion; and this is an evil, not alone on the score of difficulty and annoyance in giving nourishment, but because, under these circumstances, the digestive organs, as well as the palate, rebel against it. Variations may be made by giving, on successive days, the decoction or juice of different kinds of meat; by adding to milk different farinaceous substances, and by different modes of preparation. This rule, like most other dietetic rules, will not be carried out unless the practitioner be precise and enter into minute details in his directions concerning alimentation. Persons upon whom devolves the nursing of the sick, often attach little importance to the diet; they are apt to imagine that everything depends on remedies. The physician not infrequently meets with opposition to his measures of alimentation, arising from a prejudice against feeding patients. It has been a popular notion that starvation, so far from being the mode in which diseases are apt to kill, is a means of cure. Like other popular notions concerning diseases, this doubtless was derived from the medical profession. It is but a short time since the *cura famis* was relied upon in the treatment of most of the acute and many of the chronic diseases. Notions thus derived are often retained in the popular mind long after they have been abandoned by the profession. The introduction by enema of aliment, when it is not retained by the stomach, is often highly important.

Whenever patients desire certain articles of food, as a rule, these are to be allowed. Such a desire, if distinct, represents generally a want of nutrition, more reliable than the judgment of the physician as to the articles best suited to the case. Every one has heard of instances in which patients have craved articles of food considered as extremely inappropriate, but the cravings being indulged, perhaps without the sanction of the physician, marked improvement immediately followed. Remarkable instances of this kind are undoubtedly authentic, and they are striking illustrations of the soundness of the rule just stated. This rule is in conflict with a popular notion, for the origin of which the profession is doubtless responsible, namely, that in cases of disease the instinctive desires are morbid, and are to be opposed rather than indulged.

Alimentation, as a measure of support, is more important in cases of disease affecting the young and the aged, than during the intervening periods of life. This is consistent with the fact that starvation kills children and old persons more quickly than those who have attained to full development and who are not in advanced years. Of the 150 persons who, after the wreck of the frigate Medusa, were exposed on a raft for thirteen days, with hardly any food, children, young persons, and the aged, were the first to die from starvation.[1]

During convalescence from fevers and other acute diseases, the ordinary articles of solid food should be allowed, as soon as they are desired. Convalescence is protracted by the continuance of a liquid diet, and by an insufficient alimentation. The kinds of food may, in general, be safely left to the choice of the patient, and the quantity is to be graduated by the activity of the digestive powers and of nutrition. The risk of over-alimentation during this period is often exaggerated; and, with reference to alimentation, as well as to other measures, it is to be considered that after many diseases, for examples, the continued fevers and pneumonia, the liability to relapse is exceedingly small.

In the management of chronic diseases, measures aside from alimentation, whether medicinal or hygienic, are serviceable in proportion as they contribute to digestion and nutrition. Whatever be the nature of the chronic disease, or wherever it be seated, it is always an object of fundamental importance to keep nutrition as near as possible to the standard of health. The rules of alimentation, therefore, in cases of chronic disease relate to the most efficient means of effecting this object.

---

[1] Physiology of Man, by A. Flint, Jr., vol. ii, page 16.

Medicines not infrequently impair the appetite and interfere with digestion. If not required for a special curative effect, they are then likely to do harm by compromising, more or less, alimentation and nutrition. Hence in fulfilling therapeutical indications, an important rule is to select remedies or pharmaceutical preparations which are not offensive either to the palate or the stomach. In prescribing remedies, allowance is always to be made for the wide difference among different persons as regards the gustatory and gastric sensitiveness to medicines. The over-drugging which formerly prevailed was in no small degree objectionable on account of its effects on appetite and digestion, aside from other effects. In this aspect the use of drugs with far more discrimination and reserve now than formerly, is a great improvement; so, also, is the use of concentrated remedies, the preparation of medicines in agreeable forms, and the hypodermic administration of certain articles.

Efficient alimentation in cases of chronic disease is often impeded by prevalent popular errors. The notion that starvation is a means of cure, to which allusion has already been made, operates largely against an analeptic diet. Another popular notion is that the restriction of diet to a very few articles, and to the same articles continuously, is desirable; whereas, nothing is more certain than that a varied diet is most conducive to digestion and nutrition. As results of these errors it is not uncommon for persons with some chronic ailment, and even healthy persons, not only to become feeble and anæmic, but to suffer, more or less, from the blood-changes which are embraced under the name scorbutus. Chronic affections are in this way protracted, the ability of the system to bear them is impaired, and serious ailments are thereby superadded. Other absurd popular errors relate to supposed individual peculiarities. Many persons seem to be pleased with the idea that articles of diet which are wholesome for mankind in general, are pernicious to them. Practitioners daily meet with cases illustrating this strange manifestation of egotism. How often do we hear the trite saying that "what is one man's meat is another man's poison," a maxim which has very little foundation in truth. I suppose every one present has often met with objections to milk and eggs, which, as representing all the constituents of the organism, may be called the typical foods, on the ground that they are apt to promote biliousness! It will be a great gain, as regards alimentation in chronic diseases, when these and other errors of the same sort are completely eradicated from the popular mind.

It is highly important to consider the influence of the mind on appetite and digestion, and thereby on assimilation and nutrition. Not a small number of the disorders referable to impoverishment of the blood and innutrition are traceable to mental depression, which sustains to various disorders the relation of both cause and effect. Hence, in great part, the advantage, in many cases, of change of scene and new associations, the benefit being derived through the mind. Hence, the greater success of those physicians who take proper cognizance of the mental condition, in these cases, as compared with those whose professional offices are limited chiefly to prescribing drugs. Hence, too, the marvellous effect often of judicious encouragement, on the part of the physician, for mental depression in many cases relates to apprehensions which are either groundless or greatly exaggerated. The influence of the mind upon digestion is strikingly shown when, unhappily, patients have fallen into the habit of concentrating the attention upon the sensations which follow the ingestion of different articles of diet. If food be taken with distrust and anxiety lest it prove hurtful, the chances are it will give more or less trouble; and if taken with a pre-conviction that it will do harm, this result will be pretty sure to follow.

Having reached the end of the time which I resolved, on commencing to write, that I would not exceed, I must leave untouched many of the topics which suggest themselves in contemplating the subject of this discourse. The few and somewhat desultory considerations which have been submitted, relate entirely to alimentation when disease exists. A kindred subject is alimentation in health, considered with reference to the prevention of disease, to the development and growth of the organism, and to mental and physical vigor. The latter is a subject large in extent and of vast importance. With regard to this subject, as well as to alimentation in disease, notwithstanding the knowledge acquired and the improvements made within late years, there is yet abundant scope for further information and progressive practical progress.

My remarks have had reference, almost exclusively, to one aspect of the subject, namely, the danger from defective alimentation, or starvation. The evil consequences of excessive and improper alimentation, both in health and disease, enter into another aspect of the subject. Considered in the latter aspect, the subject is one of magnitude and importance. Unquestionably, the evil consequences of excessive and improper alimentation are not always sufficiently appreciated by all members of the medical profession; and, with the well-known tendency in the doctrines and practice of medicine to opposite extremes, a full apprehension of the danger of defective alimentation is doubtless liable to be followed by error in an opposite direction. Under the necessity, however, of limiting the scope of my remarks, of the two aspects of the subject I have confined myself, for the most part, to the one which, at the present time, as regards the occasion for suggestive considerations, seems to me relatively the more important.

VI.

TOLERANCE OF DISEASE.[1]

THE use of the term *tolerance*, as applied to parts of the body separately and to the body as a whole, is not novel. The term not infrequently enters into medical writings and conversation. It has the same sense here as in other applications; it means the "power or capacity of enduring." Strictly the term implies in the subject, or in that which tolerates, consciousness and will; and there is a mental tolerance of disease, the consideration of which belongs to psychology. In the medical sense of the term the mind is only one of a number of elements. When we speak of the tolerance of disease by the body as a whole we regard the organism, which is but an aggregation of organs and functions, in the light of an entity; and when we say that such or such a part of the body shows tolerance, or otherwise, we consider this part as having a separate individuality. It has always been the fashion in medicine to use language which implies that an immaterial principle, distinct from the mind or soul, is inherent in the body of man and in all organized bodies; a principle corresponding to the archæus of Valentine, Paracelsus, and Van Helmont. And so since the time when diseases were considered to be the work of demons, or evil spirits, it has been the custom to personify them, and to invest them with divers sentiments and passions, such as mildness and malignity, obstinacy, rebelliousness, etc. I will not stop to inquire into the reasons for so doing or to moralize thereon. Suffice it to add that this use of terms is often convenient; and at this day, inasmuch as it is understood they are used figuratively, there is little danger of the understanding being thereby imposed upon. The phrase *tolerance of disease* therefore is sufficiently sanctioned by propriety and usage.

---

[1] Read before the New York County Medical Society.

I adopt the name *tolerance* to express an important principle in medicine. Limiting attention to the body as a whole, or the organism, I shall consider *tolerance*—the power or capacity of enduring disease—as a principle which it is convenient and useful to recognize as such, and I shall offer considerations which show its importance in relation to prognosis and therapeutics.

To illustrate this principle, let a disease be selected which in itself—that is, irrespective of complications, antecedent or intercurrent affections and accidents—may or may not prove fatal. Let the disease be acute pneumonia sufficiently extensive to place life in more or less danger. Suppose a series of cases of this disease with the qualifications just stated; the patients of the same age and sex; the conditions of general health and strength of constitution, so far as it is possible to judge, similar; the measures of treatment uniform, and no important diversity in any extrinsic circumstances: clinical observation warrants the assertion that of such a series of cases in some the disease will end in death, and in some recovery will take place. Why is this? There is in addition to all the apparent points of similitude an agency, a factor, an element, or an unknown quantity, and this is *tolerance*. In such a series of cases there is a difference in the power or capacity of enduring; and hence while some patients succumb to the disease others triumph over it. I selected pneumonia simply because it was the disease which first came into my mind. What is true of this disease under the view just presented is equally true of other affections. Take as another example one of the essential fevers. Let it be typhus fever. Under in all respects identical circumstances, intrinsic and extrinsic, so far as we can appreciate them, one patient will die and another patient will recover, because the one has sufficient and the other not enough tolerance to pass through this disease safely.

The question at once arises in what the tolerance of disease consists; but, by way of preparing to consider this question, let us first inquire how diseases destroy life. Naturally we are led to apply this inquiry to acute and to chronic diseases separately. Certain acute diseases are fatal because they are seated in vital organs, and compromise the functions of these organs sufficiently to destroy life. Examples of this are some rare cases of acute pneumonia and pleurisy, cases of pericarditis and of meningitis when inflammatory changes or products affect the portion of the nervous centre which is essential to respiration. The events which are incidental to certain cases of disease may occasion death. Examples are either submucous infiltration or an exudation in laryngitis, and heart-clot in pneumonia and other affections. Exclusive of these two explanations of death from acute diseases, they kill because, to quote common expressions, "the powers of life give way," "the vital forces are exhausted," "nature can no longer hold out," etc. There was significance in the report of the cause of death in a certificate from a practitioner in this city to the Board of Health, some years ago, namely, "She died because she could not live!" This, in fact, is the rationale of death in the majority of the fatal cases of acute disease. Patients die because their tolerance is inadequate to carry them through the course of disease and the processes of restoration. An acute disease which does not involve irremediable lesions of organs essential to life, and which is without incidental events compromising fatally vital functions, will end in recovery, provided what we are accustomed to call the "powers of life," the "vital forces," or "nature" be sufficient to withstand the disease. In other words, recovery under such circumstances is a question of tolerance. If the patient can tolerate the disease for a sufficient length of time, the ending is in recovery; if tolerance give out, the ending is in death.

Chronic diseases, when they destroy life, generally involve structural changes which are dangerous in proportion to their seat, character, and extent. Seated in vital organs, and incapacitating these for the performance of their functions, a fatal result is the consequence of this effect. If, however, the parts affected be not immediately essential to life, and if there be no incidental events interfering with vital functions sufficiently to cause death, here, as in acute diseases, a fatal ending is due to want of tolerance. What was said of acute holds true of chronic diseases in all respects, provided the latter admit of recovery; that is, chronic diseases which do not involve incurable lesions, and which do not of necessity compromise the functions of vital organs sufficiently to cause death, will end in recovery, provided there be an adequate amount of tolerance; and, on the other hand, they will sooner or later end fatally if there be a deficiency in tolerance. But suppose, what is often true, that there are incurable lesions seated either in vital organs or elsewhere; the reliance is upon tolerance for the continuance of life with such a measure of health as is possible with the existence of the lesions.

Here opens up a highly important aspect of my subject. Every one who has had considerable clinical experience must have remarked the wonderful difference in different persons as regards the tolerance of chronic diseases. Take a disease which from its frequency affords numerous illustrations, viz., pulmonary phthisis. A patient may die with this disease after a few months, and the amount of local mischief be no greater than that which another patient will tolerate for more than a quarter of a century! Nothing can be more unreliable than the general condition of the patient; that is, the aspect, weight, muscular strength, etc., as representing the extent to which the lungs are involved in cases of phthisis. The contrast between the so-called rational symptoms and the physical signs is often surprising. This is a matter of common observation, and I need not dwell upon it. Certain cases of organic disease of the heart furnish striking illustrations of tolerance. It is truly astonishing how long and how well valvular lesions with enormous enlargement of the heart are sometimes tolerated. I might in like manner cite in illustration of this aspect of tolerance other chronic incurable diseases, including cancer, seated in any of the organs of the body.

I revert now to the question, In what does tolerance of disease consist? It is a well-known fact that acute diseases are often not so well tolerated by those who appear to have robust health as by those who seem comparatively feeble. A man in the prime of life, with strong muscles, and whose aspect is typical of vigor, may succumb to an affection which a weak old woman endures with comparative ease. Hence it is that physicians have frequent occasions to repeat the familiar adage of the twig, the oak, and the whirlwind. Now, in explanation of this fact, one of two things is to be supposed: either in the case of the apparently vigorous patient there are occult morbid conditions which render the task of tolerance greater than in the case of the comparatively weak patient, or there is less power of endurance. There are considerations which render the latter the more probable explanation. We notice the same apparent incongruity in the ability to endure prolonged muscular exertions, exposure to cold, and other hardships in health. The experience of military life is, that, in trials of endurance, soldiers who are slender and delicate in appearance are often the most reliable. The privations of long voyages, exploring expeditions, pioneer life, etc., are borne not infrequently as well by those who seem to have tender constitutions as by those of stronger mould; and in shipwrecks women and children have been known to survive hardened seamen. This ability to endure in health it is customary to refer to a something which is called *stamina*. In what this stamina essentially consists we cannot say; our knowledge does not enable us to explain it. It is convenient to personify it, and it is therefore spoken of as if there were really such an entity. This physiological principle which we call stamina is the analogue of the pathological principle of tolerance. As we cannot explain the former, so in what the latter essentially consists we cannot say. This comparison goes to show that when the apparently strong succumb to diseases which the comparatively feeble are able to endure, the fact is due, not to occult morbid conditions which are greater in the strong than in the weak, but to a lesser degree of tolerance in the former than in the latter.

Admitting that in what the tolerance of disease consists is not with our present knowledge fully understood, we know somewhat of its laws and of the circumstances which on the one hand promote and on the other hand impair it. This knowledge is of great importance, and it therefore claims our consideration. The tolerance of certain diseases has laws relating to age. For example, the tolerance of typhus fever is greater between ten and twenty years of age than at other periods of life. While from ten to fifteen per cent. of persons of between ten and twenty affected with this disease die, it kills one-half of those who have it after fifty years of age. Typhoid fever is best tolerated between ten and fifteen years of age, and better between five and ten than after the age of fifteen. Small-pox is tolerated badly by children and the aged. The tolerance of acute pneumonia is much less in childhood and in old age than between these extremes of life. I cite these instances as illustrations to which many more might be added. The tolerance of certain diseases has relation to sex. Women, for instance, tolerate typhus fever better than men. The tolerance of certain morbid conditions is greatly affected by habit. A striking instance of this is the ability to bear uræmic poisoning if the accumulation of urea in the blood takes place gradually. A rapid accumulation may occasion sudden coma (apoplexy) and speedy death, the patient perhaps having been conscious of no ailment up to the moment of the apoplectic seizure; whereas, if the accumulation be gradual, coma and convulsions may not take place for a long time after the manifestations of minor uræmic phenomena. It is probable that the ability to tolerate urea is acquired by habit precisely as the habitual use of narcotic drugs enables persons to take with impunity enormous doses. The exposure to the special causes of various diseases within the limits of that amount of exposure necessary for their development induces, as is well known, an ability to tolerate these causes to any extent. This is the philosophy of what is called *acclimation*. A native or one who has long resided in a yellow-fever zone without ever having had yellow fever, is protected against it by having acquired tolerance of its special cause; in other words, he has become acclimated. Tolerance of the special causes of certain diseases comes with age; thus the contagium of scarlet fever very rarely causes the disease in the middle and advanced periods of life, and after fifty years of age, as a rule, the special cause of typhoid fever is inoperative. In fact, the expression *tolerance of the causes of disease* embodies all that we know, or rather it is an acknowledgment of our ignorance, of the rationale of the wonderful fact that certain diseases are experienced but once in a lifetime. Why the eruptive fevers—typhus and typhoid and yellow fevers—leave an insusceptibility in the organism to the special causes of these diseases is, with our present knowledge, a marvellous mystery. To say that this insusceptibility is in consequence of an acquired tolerance of the special causes is, of course, only to state the fact in different terms.

The laws of the tolerance of disease which have been mentioned are alike incomprehensible and beyond our control; but there are circumstances on the one hand promoting, and on the other hand impairing this tolerance, which are to a certain extent both comprehensible and controllable. Knowledge of these is especially important. In acute diseases which prove fatal through lack of tolerance this is promoted by those circumstances which, it is customary to say, tend to maintain the powers of life; and first in rank among these circumstances is the ability to ingest, to digest, and to assimilate food. Favorable hygienic conditions promote tolerance; namely, pure air, proper regulation of temperature, cleanliness, etc. *Per contra*, circumstances which are the opposite of these—namely, inability to take food or to appropriate it, and unfavorable hygienic conditions—impair tolerance. Moreover, events in the course of disease which are depressing, debilitating, or perturbating, tend to impair tolerance; such as mental apprehension or discouragement, hemorrhages, vomiting, diarrhœa, etc.

This statement respecting acute, holds true equally in chronic, diseases. In the latter, as in the former, the circumstances first in importance as promoting tolerance are those which are conducive to assimilation and nutrition. Hygienic influences, mental and physical, which tend to increase constitutional strength and vigor, are important; and the reverse of these, together with depressing, debilitating, and perturbating events, impair tolerance. The dependence of tolerance on these circumstances is sufficiently evident in cases of all chronic diseases, but the fact is strikingly exemplified in certain cases of organic disease of the heart. A robust-looking man wishes an insurance on his life, and he comes before a medical examiner with a proud consciousness of perfect health. He has always been well, excepting an attack of acute articular rheumatism some fifteen or twenty years back. He is between forty and fifty years of age, and in answer to an inquiry he says that of late he has noticed some want of breath on walking fast or mounting stairs; but this he attributes to his having grown somewhat corpulent, and to his sedentary habits. The examiner notices perhaps some irregularity in the pulse, and on auscultating the præcordia he finds a loud mitral presystolic and a regurgitant murmur. He finds the apex of the heart lowered to the sixth intercostal space, and situated considerably to the left of the linea mammalis. He is obliged to reject him, of course, as a candidate for life insurance, and the man discovers that he is rejected in consequence of disease of the heart. He is astonished, or perhaps indignant; and it may be that he is to be congratulated if, contenting himself with a few expletives, he dismiss the matter from his mind, or if he conclude that his own consciousness is more trustworthy than the doctor's stethoscope.

This is a sketch of cases which are by no means infrequent. What is the sequel? This man had at the time of his application for a life insurance a good appetite and a fine digestion. Aside from the organic affection of the heart, all the important organs of the body were sound and their functions were well performed. His habits of life were good, and his spirits were buoyant. We will suppose that some months afterward he goes into the country, in the month of July or August, for a little relaxation and rural enjoyment. He gets intermittent fever, he loses his appetite, and his blood becomes impoverished. He now suffers from want of breath on slight exercise; soon he is unable to lie down on account of dyspnœa; his extremities became œdematous; hydroperitoneum and some hydrothorax follow. He is relieved by diuretics, digitalis, and tonic remedies. The dropsy disappears, and he resumes his avocations. He is not, however, the man he was before. He can take but little exercise, and he sleeps badly. His digestive organs do not recover their wonted functional capacity. He becomes despondent. It is not long before dropsy returns. He is obliged to sit up night after night on account of dyspnœa dependent on imperfect circulation, hydrothorax, with perhaps pulmonary œdema. Judicious measures of treatment procure only temporary relief, and he dies after weeks or months of intense suffering.

Now what is the rationale of such a history? Briefly this: he had had valvular lesions, with enlargement of the heart, for years before it happened to be discovered at the examination for a life insurance; but the lesions had been gradually produced, and progressed slowly. He had become habituated to the comparatively little disturbance of the circulation which they occasioned, and he was conscious of no malady. In other words, under the conditions stated—namely, a good appetite, a fine digestion, and no intercurrent affection—he tolerated perfectly the cardiac lesions. The conditions of tolerance were changed when he suffered from malaria and defective alimentation. Under these changed conditions as regards tolerance he began to suffer from the effects of the obstructive and regurgitant lesions in conjunction with a weakened heart. The former power of the heart's action was never regained; but, on the contrary, with diminished appropriation of food and poor blood, the organ became progressively weaker and more yielding to the pressure from the contents of its cavities; hence dropsy, dyspnœa, and at length death from failure of the heart's action.

It would be easy to present hypothetical cases of other chronic diseases in illustration of circumstances which on the one hand promote and on the other hand impair tolerance; but, without dwelling longer on this division of my subject, I pass to some considerations relating to the practical applications of the principle of tolerance to prognosis and therapeutics.

Every practicing physician knows that accuracy of diagnosis, although indispensable, is not alone adequate as a basis of positiveness in prognosis. Let us be ever so sure of the nature of a grave acute disease—an essential fever or an inflammation—let the diagnostic evidence be as complete as possible in regard to its degree, the extent to which parts are affected, the stage, together with a full knowledge of any existing complications; add to this an acquaintance with all that is known respecting the intrinsic tendencies of the disease, of its laws, and the results of statistical researches into its rates of mortality; there is still remaining that imponderable element which we call tolerance, on which, in individual cases, hinges the question as to death or recovery. One patient will die because he lacks a sufficient amount of that vital stamina which carries another patient safely through the disease. Hence the proverbial non-committalism of those physicians who regard as an unworthy trick an attempt to gain credit for superior acumen by means of a lucky hit at guessing. In like manner, to determine with precision the duration of life in cases of chronic diseases which must sooner or later prove fatal, is beyond the bounds of scientific prescience. In addition, however, to laws and circumstances already adverted to, there are certain considerations which, as experience has taught, are to be taken into account in estimating tolerance. Habits of intemperance, for example, aside from the affections directly attributable thereto, diminish the ability to endure either acute or chronic diseases. This is also true of prolonged overtasking of body or mind; in other words, "wear and tear." Tolerance is affected in no small degree by the mental temperament, in respect of which different persons differ widely. A determined resolution to overcome disease often aids not inconsiderably in effecting recovery, and also promotes tolerance where recovery is impossible. On the other hand, apprehension and despondency have an opposite effect. These, with other considerations which might be added, enter into prognosis as connected with tolerance. They are considerations which bear upon prognosis in advance; that is, in the early stage of diseases. To determine the present condition as regards tolerance in cases of acute or chronic disease is more easy. By means of existing symptoms we can gauge tolerance with considerable positiveness. In acute diseases the circulation, as represented by the pulse, furnishes the symptoms which have the most significance in this aspect. In cases of acute diseases which kill from want of tolerance the mode of dying is by asthenia or exhaustion. Now, the pulse may be said to be the thermometer of the vital powers. Failure of these—that is, the giving way of tolerance—is denoted by feebleness and frequency of the pulse, assuming that these characters are not dependent on heart-lesions. Muscular prostration comes next as denoting impaired tolerance. It might be supposed that a high temperature of the body is to be considered as a sign of failing tolerance, but it seems more rational to regard this as causative rather than indicative of ebbing vital powers. In cases of chronic disease, defective tolerance is shown by impairment of the forces carrying on the circulation, together with muscular debility and progressive emaciation. Skilfulness as a prognostician in cases of acute and chronic diseases depends on the ability to judge of tolerance by means of these criteria, in conjunction with the laws, circumstances, and considerations before referred to.

The application of the principle of tolerance to therapeutics is the more important of the practical aspects of the subject. In acute diseases, the danger relating chiefly to asthenia, generally tolerance is the objective point in the management. It is an object, in the first place, to avoid measures which will be likely to impair tolerance. Conservatism in medical practice is, in other words, the protection of tolerance. In the second place, it is an object to promote tolerance. Take, by way of illustration, the potential measure, bloodletting. If the protection of tolerance be an important object, this measure is thereby contraindicated. Assuming that it will procure relief, the ulterior effect will be hurtful in proportion to the degree of danger of dying by asthenia. If, on the other hand, whatever danger there may be is not from asthenia, bloodletting is admissible, even if it be only palliative, provided the same palliation is not obtainable by other means which do not impoverish the blood. Governed by this rule, the abstraction of blood is contraindicated, for example, in the essential fevers, in which recovery depends on tolerance; but, in view of [illegible] otness and potency, it may be advisable in acute [illegible], a disease which kills by apnœa.

It is a ready method of forming a judgment concerning the propriety of employing any potential remedy or measure of treatment, to propound to one's self at the bedside, in a case of acute disease, the following questions: If this disease prove fatal, will it kill by asthenia or apnœa? If by asthenia, will the remedy or measure of treatment under advisement impair tolerance? If the answer to the last question be in the affirmative, as a rule the remedy or measure will do harm. It may be sufficient in many cases of acute disease to abstain from treatment which would impair tolerance; but if there be reason to fear that the vital powers are inadequate to carry the patient safely through the disease, then the promotion of tolerance becomes an important object of treatment. The means for this end are those which constitute what is commonly called the sustaining or supporting treatment. It is a corollary of facts presented already that alimentation holds the first rank among the supporting measures. Tonic remedies have a certain measure of importance as conducive to tolerance. Alcohol has its place of usefulness here. Without discussing the question whether alcohol be a food or a remedy, and divesting the topic of all moral considerations, that it is an important constituent of the supporting treatment must be admitted. Practically, its usefulness as such consists in this: it promotes for a time tolerance; its use is indicated where there is evidence of failure in tolerance; it is often wise to forestall by its use the failure of tolerance; the urgency with which it is indicated is proportionate to the degree of danger from failure in tolerance. The proof of its usefulness is the evidence of increased tolerance without any of the phenomena of alcoholism or excitation. It is superfluous to add that all the favorable hygienic influences, mental or physical, which can be brought to bear upon patients affected with acute diseases tending to death by asthenia, are useful by promoting tolerance. Next in importance to the measures which have reference to causative agencies, and those which are directly or specially curative, is to be ranked the protection and promotion of tolerance in the management of those acute diseases of which asthenia is the dangerous element.

In the treatment of chronic diseases how few are the known remedies which are directly or specially curative. We have some such remedies. Quinia and arsenic in malarial affections and in certain cases of neuralgia, mercury and the iodide of potassium in syphilis, the bromides in epilepsy, at once rise in the mind and bear testimony to the truth of this assertion. But it would be difficult to extend the list much. In most cases of chronic disease ending in recovery, the result is not due to a direct or specially curative medication. We personify a fictitious entity when we attribute cure to nature or the *vis medicatrix naturæ;* yet it by no means follows that we are only passive spectators when our patients get well, and we cannot assume to have controlled the disease by drugs. Drugs indeed often do much toward cure, although their action be not directly or specially curative. They procure palliation or relief of suffering, and they may be indirectly of great use by promoting appetite and digestion, supplying important constituents to the blood, favoring the elimination of noxious principles, etc. Operating in these ways, they may be said, in a certain sense, to do good by affecting favorably tolerance. In so far as tolerance is favorably affected, recuperation is facilitated; and here, as in acute diseases, next in importance to curative medication (whenever this is practicable) is to be ranked the protection and promotion of tolerance.

In the treatment of those chronic diseases which are incurable, tolerance is pre-eminently the objective point. If a cure is not to be effected, the ends of treatment are, first, to prolong as much as possible the duration of life; and second, to render life as comfortable as possible notwithstanding the continuance of disease. These ends are far from being trivial. Shall a patient live for a few months or for many years, is a question the answer to which may depend on the knowledge and skill of the physician. This fact is not perhaps always sufficiently appreciated in medical practice. The recognition of incurable diseases is of prime importance. Herein diagnostic ability is essential to a rational management; and a rational management consists on the one hand in the avoidance as far as may be of everything which impairs, and on the other hand in the judicious employment of measures which promote, tolerance.

All are familiar with the following maxims of Chomel, which have become classical: The proper aim of the physician is, first, not to do harm; and second, to try to do good. The physician is not to treat diseases, but patients affected with diseases. The former of these maxims inculcates, in other words, the protection and promotion of tolerance as a fundamental rule in the practice of medicine. The latter maxim inculcates this rule with still greater emphasis. In the treatment of patients affected with diseases, whether acute or chronic, the principle of tolerance should always pervade our thoughts and acts.

VII.

ON THE AGENCY OF THE MIND IN ETIOLOGY, PROPHYLAXIS, AND THERAPEUTICS.[1]

THE reciprocal influences of mind and body offer a wide range for investigation, and certain points of inquiry relating thereto may be said to be of paramount importance as compared with other branches of scientific research. These points relate especially to the influence of body on mind. Here are questions which concern not alone mental pathology, but morality, jurisprudence, social life, the progress of civilization and human happiness perhaps in a future life as well as in our present existence. Questions relating to the influence of the mind on the body are more exclusively medical in their character, and I shall confine myself to these in the following remarks.

With cases illustrating a morbid exaggeration of subjective symptoms, and a conviction of the existence of imaginary diseases, all practitioners are familiar. These cases are nosologically disposed of by calling them cases of hysteria, melancholia, pathophobia, and hypochondriasis. I am tempted to introduce a brief account of two striking examples which have recently fallen under my observation.

---

[1] Read before the Yonkers Medical Association.

A married lady, of education and superior intellectual endowments, nearly forty years of age, in easy circumstances, and without children, unhappily had been led to concentrate her attention on her bodily condition. After a series of fancied ailments, for which she had kept the bed for over three years, she conceived the idea that from a peculiar susceptibility of the brain she was unable to bear the stimulus of light. During several months she insisted that her room should be darkened; and the darkness was made as complete as possible by black curtains covering the windows and doors, and by surrounding her bed with screens, to absorb the few rays of light which entered when a door was opened. In the meantime repeated examinations of the eyes by an eminent oculist failed to discover any evidence of disease. After much perseverance on the part of physicians and friends, she was at length persuaded to bear a little exercise of vision. Very gradually the darkness was diminished, and she believed herself finally cured of this malady, without admitting that she had suffered from a delusion. She was undoubtedly sincere in her belief in the reality of the fancied malady, and it would have been worse than useless to have attempted to convince her to the contrary. This patient believed that to change her position in bed by her own efforts would be fraught with evil consequences, and for this purpose the constant attendance of a nurse was required; yet it is certain that there was no lack of muscular strength. Her aspect was healthy; there was no impairment of nutrition; she ate an abundance of food, and careful interrogations of the various organs showed no evidences of any disease.

A married lady, wealthy, and in a high social position, about fifty years of age, consulted me for loss of the faculty of speech. She communicated respecting her malady by means of a slate and pencil, which she carried with her for that purpose. She declared her inability to speak even in a whisper. Our conversation was carried on partly in writing and partly by signs which her husband interpreted. A thorough examination of the chest was completely negative, and there was no paralysis of the tongue or lips. I refrained from expressing distrust of her inability to speak even in a whispered voice, and after a prolonged interview I dismissed her with a prescription. Some time afterward she called again to tell me that she could not take the remedy which I had prescribed, and that her malady continued. That she honestly believed herself unable to speak I did not doubt. She is a lady of unusual intelligence, and in the second interview the conversation after a time became directed to topics in which she was much interested. Finding at length that the slate and pencil, together with her signs, which were with difficulty interpreted, failed to convey her ideas satisfactorily, she began to speak, and continued the conversation for half an hour in a natural tone of voice. I made no comment thereon, and nothing was said by her respecting the sudden recovery of speech. This was the last consultation. She has not again called upon me.

It would be easy to multiply cases illustrative of delusions respecting health. The patience and temper of physicians are sorely tried by such cases. Reasoning with the patient is without much avail. Positive assurances by the physician are often useless, or their efficacy is but transient. Ridicule only ruptures professional relations. There is ample scope for tact and perseverance in the management; and such cases claim more consideration and persistency of effort in the way of judicious treatment than they are apt to receive.

The various delusions respecting imaginary diseases, together with indefinite apprehensions concerning health, and undue attention to the functions of the body, undoubtedly enter more or less largely into etiology. There is perhaps little ground for the opinion which has been held that devotion to the study of particular affections predisposes to their development; but it is certain that constant watching of particular functions is almost sure to lead to disorder. If the attention be habitually concentrated on the digestive organs, indigestion is an almost inevitable consequence. That unfortunate being, a confirmed dyspeptic, may often indulge his appetite to the fullest extent with impunity, provided the mind be agreeably diverted for some hours afterward. The concentration of the mind on the digestive processes is, in fact, often the chief cause of chronic dyspeptic ailments. Functional disorder of the heart is frequently kept up by a conviction of the existence of organic disease, and of liability to sudden death. Frequent micturition and polyuria are produced by apprehensions relating to the urine; and temporary impotency is a well-known effect of imagined sexual incompetency. The depressing influence upon the system of fixed delusions and prolonged indefinite apprehensions is by no means inconsiderable. If diseases be not thereby induced, their production is favored by the agency of the mind, which acts either as an auxiliary cause or by rendering the system more susceptible to various morbific influences.

The morbid mental conditions to which I have referred, as standing in a causative relation to physical maladies, are themselves often dependent on causes relating to the mind. What causes originating in the mind induce these morbid mental conditions? Observation shows that the exercise simply of the intellectual faculties rarely gives rise to mental and thereby to physical disorder. They who are devoted to pursuits involving the active employment of the intellect are not in consequence prone to diseases of the mind. Madness is rarely, if ever, an effect of "much learning," as implied in the exclamation of Festus to Saint Paul. The maladies, mental and physical, which are incident to intellectual pursuits, as a rule, do not depend directly on the latter, but they arise from sedentary habits, or other associated violations of hygienic laws. Observation will, I believe, bear me out in these assertions. "Wear and tear," nervous asthenia, morbid apprehensions concerning health, melancholia, hypochondriasis, and insanity, together with the ills of the body resulting from these mental conditions, are the results of the emotional rather than the intellectual activity of the mind.

Among those whose work may be distinguished as *braincraft*, they who suffer from the mental causes of disease are not the close students, the industrious authors, and the laborious lawyers, clergymen, and physicians, in so large a proportion as men of business, speculators, and politicians. It is not the amount of intellectual work so much as the constant tension from anxiety and suspense, the alternations of undue exultation and despondency occasioned by the so-called caprices of fortune, and persistent over-excitement, which constitute morbific agencies of mental origin.

I will venture another statement, which, as I believe, observation will verify—namely, the calamities of life which, by way of distinction, we may call providential, are far less likely to prove morbific than emotional disturbances incident to a disordered imagination, irregularities of life, and unrestricted passions. By the term providential calamities I mean those which are in a great measure beyond human control, and therefore appear to occur more especially in the order of Providence; such as the death of relatives and friends, the loss of property by events which could not be foreseen nor provided against, and deformities or maiming by disease or injuries. Both mind and body tolerate such calamities much better than those for which the responsibility rests with man rather than with God.

Physicians, sanitarians, and moralists have of late had much to say respecting the evils of over-exertion of the intellect and of mental strain; and there has been much occasion for speaking of these sources of injury to mind and body in our country, especially during the past few years. But there is another aspect of the etiology of morbid mental conditions, concerning which much less has been said—namely, deficient exercise of the intellectual powers, or insufficient activity of the mind, as a source of morbific agencies. Observation will, I think, show that evils of both body and mind originate quite as often in a want of the proper action of the intellectual and moral faculties as in their over-use or excitation. Occupations which employ the intellect are likely to prevent inordinate attention to the bodily functions, and herein their influence is prophylactic. Abundant illustrations of the evils of deficient activity of the mind are to be found among those who, under the delusive expectation of enjoying leisure and rest, have relinquished pursuits which involved an habitual exercise of the mental faculties. Let me cite two examples from among those which have come under my observation.

A highly intelligent, energetic, and able merchant acquired a handsome competency at about the age of thirty-five. He then began to be apprehensive concerning his health. Fancying successively the existence of different diseases, he spent most of his time in watching for symptoms and in the study of medical works. At one time the kidneys were the organs under surveillance, and he became an expert in the chemical and microscopical examinations of the urine, in order to investigate daily this excretion in his own case. For several years he exemplified the varied phases of pathophobia. At length pecuniary reverses came to his relief, and it became necessary for him to engage anew in business. He did so, and from that time, for a period now of five or six years, he has been exempt from the delusions which had previously rendered life a burden to him.

An astute lawyer, aged about forty, commencing his professional life without means, has been eminently successful as regards the acquisition of wealth. Some disorder of the digestive system led him to become apprehensive on the score of health. This resulted in confirmed pathophobia. He now devotes most of his time to the study of his bodily functions and to reading medical works. He requires elaborate analyses of the urine and fæces, and is anxious to become a microscopist, in order that he may himself examine his blood. Positive assurances that there is no evidence of disease of any of the organs of the body are unavailing. When told that it is bad policy for him to undertake to investigate his organism, he admits it, but declares that the desire to do so is irresistible. Here is one among many instances in which the absence of wealth as regards the *mens sana in corpore sano* would be a positive blessing. It is probable that the employment of the mind to gain a livelihood and a competence would have prevented him from falling into his present truly pitiable mental condition.

It is a well-known fact that habits of mental activity cannot be given up without risk of impairing the healthy condition of mind and body. Of the members of the professions and men of business who retire to enjoy the fruits of their labors, a large proportion suffer from ennui and depression of spirits. Many become affected with confirmed melancholia and hypochondriasis, and in not a few cases insanity is the result. These morbid mental conditions, acting upon the organism through the nervous system, lower the vital powers, interfere with the processes preparatory to nutrition, and occasion various functional disturbances. Hence they promote the action of the various causes of disease, they impair the ability to resist disease, and they consequently tend to shorten life. But habits of apparent mental activity, if the different faculties be not adequately engaged, will not protect against morbid conditions of the mind. Let me preface some remarks relating to this statement by a case.

A patient, who has hardly reached the middle period of life, by his industry, integrity, and remarkable financial ability has already acquired a large fortune. To this end his energies have been directed, and he has been eminently successful. Now, it may be assumed that any great object of human effort, when accomplished, fails to afford the satisfaction which had been anticipated. The love of riches with this patient is not a ruling passion; yet, from the force of habit, he continues to give his attention to business, and doubtless is constantly adding to his wealth. He pursues a prudent course in his business transactions, and he has become so familiar with his method of money-making that it now requires no great amount of mental effort. His aspirations for success are in a great measure satisfied; but while in the eyes of others he holds a very enviable position as regards worldly prosperity, and while, in addition to wealth, he has everything as regards social and domestic relations to render him happy, he declares, in professional confidence, that he is one of the most wretched of men. He finds himself unable to derive enjoyment from the blessings which Providence has showered upon him. He is a martyr to melancholia and hypochondriasis. His morbid mental state is not dependent on any disease of body. The difficulty is, his mental powers and capacities are not fully and appropriately occupied. The case is a type of a class of unfortunates who are much to be pitied.

The practical truth which such cases teach is that the proper exercise of all the faculties of the mind, the sentiments as well as those belonging to the intellect, is the great requisite for mental health, and consequently for happiness. The habitual activity of those attributes of mind which enter into true philanthropy and practical benevolence would often prove a sure means of preventing and curing morbid mental conditions which embitter life. It is safe to assert, without knowledge of the fact, that George Peabody was not a victim of melancholia or hypochondriasis; but it is by no means necessary to possess the means for munificent generosity to secure the exercise of sentiments underlying the beneficent actions which render the name of Peabody illustrious. They who are not affluent, and even the poorest, may enjoy the sanitary influence (to speak of nothing else) of the exercise of these sentiments. It is one of the traditional sayings of the eccentric Abernethy, that being consulted by a rich patient suffering from mental inactivity and the evils of luxurious indulgence of the appetite, his advice was to live on a shilling a day, and to earn the shilling. The advice embraces an important practical truth—namely, the need in such cases, in addition to temperance, of mental occupation, with an adequate purpose. Of course such advice is superfluous as regards the probability of its being literally followed; but the practical truth which it embraces is not broad enough to meet all cases. It points to the importance of the intellectual faculties only, ignoring those of the moral nature. Some one has said, in substance, that to do something each day which will render others happy is a preventive against ennui and misanthropy. If some of our patients would adopt this as a rule of conduct, it would do far more toward restoring mental and physical health than any drugs which we can prescribe. I have sometimes ventured to propose this rule as a therapeutic measure, but I confess that as yet I have not in any instance secured a fair trial of it.

I trust that the tenor of the foregoing remarks will not expose me to the charge of having wandered without the proper boundaries of practical medicine. Mental disorders not amounting to insanity, it seems to me, are not sufficiently considered by medical writers, and their importance is apt to be under-estimated by practitioners of medicine. These disorders not infrequently precede and lead to insanity; and there are grounds for the belief that timely attention to the former on the part of the physician would often prevent the latter.

It so happened, a few years ago, that I was consulted by the friends of a prominent citizen, holding an office of much responsibility, respecting a state of great mental depression, which it was feared denoted danger of insanity. From the statements which were made to me I expressed a decided opinion that this danger was imminent, and that medical advice should be obtained without any delay. This was in the evening, and it was decided to defer any action until the following day. Early the next morning the patient committed suicide. I cannot but think that had he been seen on the evening before his death by an intelligent and judicious physician, his valuable life would have been spared. It is true of mental as of many other diseases, that they are easier prevented than cured. In diminishing the prevalence of insanity more is to be expected from prophylaxis than from therapeutics.

The treatment of cases of insanity is very properly confided, for the most part, to those who give exclusive or special attention to this branch of medical practice; but it is to be considered that they who treat cases of insanity do not, as a rule, see patients until after they have become insane. The treatment of mental maladies which precede and lead to insanity must devolve upon the general practitioner. Hence the importance of according to affections of the mind a larger share in medical literature than has hitherto been done. It is worthy of note that some of our medical colleges have lately assigned to this class of affections a distinct place in the curriculum of instruction. It should also occupy a fair proportion of space in systematic treatises on the principles and practice of medicine; and a work devoted to morbid mental conditions originating from causes pertaining to mind and body, without embracing insanity, would prove, if full justice were done to the subject, most interesting and useful.

In conclusion, I shall offer a few thoughts on the prophylactic and therapeutic agency of the mind with reference to diseases affecting the physical organism.

Are diseases ever prevented by the mental state? It is a common belief with physicians and others that there is a measure of prevention against certain diseases in the absence of fear of them; and, *per contra*, that fear of a disease sometimes enters largely into its causation. It is not easy to demonstrate the correctness of this belief, but there is reason to consider it as well founded. During the prevalence of epidemics it is a matter of observation that the timid and pusillanimous are apt to be attacked, whereas they who are courageous and more thoughtful of others than apprehensive for themselves are likely to be unharmed. There is nothing in this very mysterious or unintelligible. The depressing influence of fear lessens the power of the organism to resist the action of morbific agents. On the other hand, the vital functions go on regularly and actively when the mind is undisturbed, and the attention diverted from self; hence it is more difficult for the causes of disease to take root in the system.

I think it may be assumed that the exercise of pure and lofty sentiments is conducive to the health and vigor of body as well as mind. In so far then as bodily health and vigor afford protection against disease, the exercise of these sentiments is prophylactic. If I mistake not, the facts of history show that they who, actuated by motives springing from generosity and nobleness of soul, engage in undertakings requiring long-continued ex-

ertions, physical or mental, or both, with perhaps severe hardships and self-denials, are apt to be spared from disease and death until the objects are accomplished. Striking instances of this kind appear to exemplify a direct interposition of Providence. The ends of Providence, however, are effected by means; and it is reasonable to suppose that in these instances there is an agency pertaining to the mind which is conservative as regards the prevention of disease. George Peabody is reported to have said, a few days before his death, "I have prayed daily to God to spare my life to carry out the work I was endeavoring in my feeble way to accomplish, and he has done it." Is it inconsistent with a belief in the efficacy of prayer to conjecture that the mental condition indicated by this statement may have been positively instrumental in prolonging the life of this illustrious philanthropist? If there be truth in the idea that the activity of the higher sentiments involves a prophylactic agency, health and length of days are to be added to other and worthier inducements for the cultivation of these sentiments.

That mental conditions are more or less operative either in promoting, or otherwise, recovery from diseases, is a truth which all medical observers must admit. While on the one hand a feeling of discouragement and hopelessness as regards recovery are obstacles not infrequently in the way of cure, on the other hand hope and confidence in the means employed for recovery are often powerful auxiliaries in the successful treatment of diseases. The state of the mind of a patient enters in many cases more or less largely into the prognosis. Of course to develop and maintain this, hope and confidence should enter, within proper limits, into the aims of the physi-

cian. The difference among practitioners as regards success in the treatment of diseases arises in no small degree from a difference, first, in an appreciation of the importance of exciting a proper measure of influence on the minds of patients in the way of encouragement; and second, in the knowledge and tact required to exert such an influence. All of us know physicians who are good diagnosticians, and whose judgment in the employment of remedies is excellent, but who are comparatively unsuccessful, both in treating diseases and obtaining practice, chiefly in consequence of a lack of this knowledge and tact. The mental temperament of the practitioner has much to do in this matter. Some physicians are prone to look always on the dark side of cases. They are constantly thinking of the unfavorable events which may happen, and they are unable to conceal their apprehensions from patients. They look upon every case in its most serious aspect, and their countenances at the bedside, if not their words, express gloomy forebodings. No amount of skill in diagnosis and the use of drugs will compensate fully for the baneful effect of this temperament. It were better had those who are thus constituted chosen some other vocation than the practice of medicine. Other physicians are distinguished for always taking the most hopeful view of cases. They look ever on the bright side. Their looks infuse hope, and their words are full of encouragement. The effect is often more powerful than medication. There is, of course, an injudicious extreme in the latter direction, and between this extreme and the opposite there is a golden mean; but if there must be a deviation from this mean, it is desirable that it should incline to hopefulness rather than despondency.

We meet sometimes with cases in which recovery from disease seems fairly attributable, in a great measure, to a resolute determination on the part of the patient to recover. An unfavorable prognosis is communicated to a patient. He declares that he will not die, and he gets well, when, according to prognostics, which are not thereby invalidated, he ought to have died. Examples of this kind have doubtless fallen under the observation of my readers. It has fallen to my lot to observe a large number of cases of tuberculous disease of the lungs; and I have been struck with the fact that in the comparatively few which have ended in recovery, the patients have generally been persons of a strong will, who, appreciating fully the disease, have resolved, if possible, to overcome it. I cannot but think that the proportion of cases ending in recovery would be larger than it is, were it not that the disease carries with it so often either a delusive expectation of recovery without exertion, or a passive acquiescence in a fatal termination.

The management in many cases of disease embraces measures, not to effect a cure, but to secure as fully, and for as long a period as possible, tolerance of the disease. To prolong life, and to render as comfortable as may be life as long as it lasts, are the grand objects of management when diseases exist which are incurable, and which, sooner or later, will end fatally. Now, mental conditions have much to do toward the accomplishment of these objects. Occupations which engage the mind sufficiently to prevent undue attention to symptoms, over-anxiety, and apprehensions, are often of great utility. Knowledge of the existence of an incurable disease is sometimes extremely unfortunate for the welfare of the patient. I am convinced that the duration of life is sometimes shortened, and comfort during life lessened, by this knowledge.

It is perhaps a common belief that the existence of organic diseases of the heart should be known as early as possible, in order to take advantage of precautions relating to physical exercise and mental excitement, which are generally deemed of great importance. But even these diseases, as it seems to me, are as a rule better tolerated when, from either ignorance of their existence or an imperfect appreciation of their gravity, patients continue to pursue avocations which may involve considerable muscular exertion as well as mental activity. The explanation is simple. Tolerance of these as well as other incurable affections is promoted by keeping the general health and vigor at the highest practicable point. Ample alimentation, active digestion, and good nutrition are means essential for this end. Employment of the faculties of mind and body in the pursuits to which one is accustomed conduce to the end by promoting these means. Certain it is that not infrequently persons with incurable diseases, when they become fully awake to the fact, and make a radical change in their habits of life, begin to show a want of the tolerance which had previously existed, and the resistance diminishes rapidly from that moment. If this be a correct statement, it embodies a truth of great importance in its practical bearing, and it seems to me one which physicians do not always sufficiently consider. It is remarkable how much work has been done, and how much hardship has been endured, by men engaged in large undertakings, with either heart, lungs, kidneys, or other important organs greatly damaged by incurable disease! This valuable lesson is to be learned from these examples: that diseases which cannot be cured are best and longest endured when all hygienic influences relating to mind as well as body combine to develop and maintain to the utmost extent the vigor of the organism.

VIII.

DIVINE DESIGN AS EXEMPLIFIED IN THE NATURAL HISTORY OF DISEASES.[1]

AN invitation to address the Young Men's Christian Union ought not perhaps to be accepted by me without some misgivings, if for no other reasons, in consequence of the limited range of subjects to which my choice must be restricted. Studies connected with *diseases* have, for several years past, so engrossed my attention, that I should be at a loss in looking elsewhere for a theme appropriate to a public lecture. "And what," I can fancy will be the mental inquiry of those who now hear me, "can be said of *diseases* which will have either interest or importance for the majority of those assembled here this evening?" These studies, it will be admitted, have claims on all who are, or who expect to become, curators of the sick; and to the votaries of medicine they are, for the most part, cheerfully relinquished by the rest of mankind. A sentiment not uncommon, if I mistake not, would lead many persons to regard the acquisition of scientific knowledge respecting diseases with a feeling somewhat akin to that which the prospect of an experimental acquaintance with them is calculated to inspire. I am not aware that in these days of educational enterprises it has ever occurred to any one to endeavor to popularize the science of pathology. Is it possible that this province of knowledge can furnish a subject suited to the taste of the auditory with which I am honored? I should meet this question, I repeat, with misgivings; but in answering it affirmatively, as I virtually have done by appearing before you, I should do gross injustice to the association, to those present, and also to myself, not to confess the indulgence of a hope that a field of inquiry so forbidding as this may appear on its superficial aspect, may yet be found to supply topics worthy of your attention.

---

[1] Read before the Young Men's Christian Union in Louisville, Ky.

It is the unpleasant duty of the physician occasionally to prescribe nauseous medicines. All his remedies, however, are not of that description. Some are even agreeable to the taste. But so closely is the idea of a medicated potion associated with an emotion of disgust, that a dose, be it even palatable, is rarely taken without a wry face. Permit me to avail myself of this illustration, so far as it may serve in deprecating a premature judgment respecting the subject that I have chosen.

I shall ask your attention to some remarks on *Divine design as exemplified in the natural history of diseases.*

To say that the natural history of diseases affords striking exemplifications of Divine design, may seem strange to one who has not given attention to the subject; and still stranger to such a one will be the assertion that in pathology, scarcely less than in other of the natural sciences, are to be found evidences, abundant and intelligible, of the wisdom and beneficence of the Creator. I will preface the endeavor to illustrate these positions by a remark which will perhaps excite, for a moment, even greater surprise: *The existence of disease, relatively considered, is an inestimable boon vouchsafed by* *a kind Providence.* I say "relatively considered." I refer, in this qualification, especially to the limited duration of human life. Man being mortal, his liability to disease is a signal blessing. Extravagant as this assertion may at the first blush appear, a little reflection will suffice to make its correctness apparent. Imagine sickness to be abolished, leaving death, as now, an inevitable destiny; and consider the effects on the character, conduct, and happiness of mankind. The termination of life would, of necessity, be invariably without forewarning. The occurrence of that event would always be attributed to the direct fiat of the Almighty; or, quoting the significant expression sometimes employed in cases of inquest, to the "visitation of God." How appalling to witness the spectacles of instantaneous and unexpected destruction, which would be daily presented in our streets, in places of business, and in public assemblies! An accident involving the immediate loss of but a single life fills a neighborhood with horror. What if every instance of mortality was of that description, and rendered more shocking by the fact that life was destroyed irrespective of any apparent agency!

Personally, the liability to sudden death is generally dreaded as a grievous calamity. Both reason and instinct lead the mind to prefer that life should be yielded up on the bed of sickness. The litany of the Protestant Episcopal Church, as is well known, teaches the suppliant to petition that he may be delivered from so great an evil. Yet, were disease to be abolished, sudden death would be the common lot of all.

Were we to trace more deeply the consequences of such a change in the order of nature, we should find that

ertions, physical or mental, or both, with perhaps severe hardships and self-denials, are apt to be spared from disease and death until the objects are accomplished. Striking instances of this kind appear to exemplify a direct interposition of Providence. The ends of Providence, however, are effected by means; and it is reasonable to suppose that in these instances there is an agency pertaining to the mind which is conservative as regards the prevention of disease. George Peabody is reported to have said, a few days before his death, "I have prayed daily to God to spare my life to carry out the work I was endeavoring in my feeble way to accomplish, and he has done it." Is it inconsistent with a belief in the efficacy of prayer to conjecture that the mental condition indicated by this statement may have been positively instrumental in prolonging the life of this illustrious philanthropist? If there be truth in the idea that the activity of the higher sentiments involves a prophylactic agency, health and length of days are to be added to other and worthier inducements for the cultivation of these sentiments.

That mental conditions are more or less operative either in promoting, or otherwise, recovery from diseases, is a truth which all medical observers must admit. While on the one hand a feeling of discouragement and hopelessness as regards recovery are obstacles not infrequently in the way of cure, on the other hand hope and confidence in the means employed for recovery are often powerful auxiliaries in the successful treatment of diseases. The state of the mind of a patient enters in many cases more or less largely into the prognosis. Of course to develop and maintain this, hope and confidence should enter, within proper limits, into the aims of the physi-

eases occur, is dependent on human conduct. But aside from man's own agency, voluntarily or involuntarily, and irrespective of causes peculiar to place or time, cases of disease are now, and ever will be, sufficiently numerous to show that by Divine appointment they are incident to human experience. And it is worthy of notice that, in this respect, there is a marked contrast between the human family and inferior animals. The diseases affecting the latter are comparatively few, and rare in occurrence.

2. Of the instances of diseases affecting mankind, a fatal issue occurs only in a small proportion. Here again, there is by no means uniformity at different periods and localities, and, it is to be presumed, the ratio of fatality from all diseases, and from some more especially, is affected now, and will be more and more as science advances, by human agency exerted through the healing art. But, independently of these considerations, I think I am justified in assuming that the number of cases of illness would be large in proportion to the number of deaths. In this particular, too, there is a notable difference between the human race and the lower orders of animals. The latter are vastly less subject to diseases, but their diseases are fatal in a vastly greater ratio.

Without enlarging on these facts, I have adduced them in proof that the institution of disease is for objects beyond those relating directly to death, to which reference has already been made. The nature of these objects we can, to some extent, understand. Observation and experience teach the utility of sickness in its chastening influences on the mind of the sufferer; in the occasions which it affords for the cultivation of sentiments of sympathy, affection, and charity; in its admonitions

ertions, physical or mental, or both, with perhaps severe hardships and self-denials, are apt to be spared from disease and death until the objects are accomplished. Striking instances of this kind appear to exemplify a direct interposition of Providence. The ends of Providence, however, are effected by means; and it is reasonable to suppose that in these instances there is an agency pertaining to the mind which is conservative as regards the prevention of disease. George Peabody is reported to have said, a few days before his death, "I have prayed daily to God to spare my life to carry out the work I was endeavoring in my feeble way to accomplish, and he has done it." Is it inconsistent with a belief in the efficacy of prayer to conjecture that the mental condition indicated by this statement may have been positively instrumental in prolonging the life of this illustrious philanthropist? If there be truth in the idea that the activity of the higher sentiments involves a prophylactic agency, health and length of days are to be added to other and worthier inducements for the cultivation of these sentiments.

That mental conditions are more or less operative either in promoting, or otherwise, recovery from diseases, is a truth which all medical observers must admit. While on the one hand a feeling of discouragement and hopelessness as regards recovery are obstacles not infrequently in the way of cure, on the other hand hope and confidence in the means employed for recovery are often powerful auxiliaries in the successful treatment of diseases. The state of the mind of a patient enters in many cases more or less largely into the prognosis. Of course to develop and maintain this, hope and confidence should enter, within proper limits, into the aims of the physi-

cian. The difference among practitioners as regards success in the treatment of diseases arises in no small degree from a difference, first, in an appreciation of the importance of exciting a proper measure of influence on the minds of patients in the way of encouragement; and second, in the knowledge and tact required to exert such an influence. All of us know physicians who are good diagnosticians, and whose judgment in the employment of remedies is excellent, but who are comparatively unsuccessful, both in treating diseases and obtaining practice, chiefly in consequence of a lack of this knowledge and tact. The mental temperament of the practitioner has much to do in this matter. Some physicians are prone to look always on the dark side of cases. They are constantly thinking of the unfavorable events which may happen, and they are unable to conceal their apprehensions from patients. They look upon every case in its most serious aspect, and their countenances at the bedside, if not their words, express gloomy forebodings. No amount of skill in diagnosis and the use of drugs will compensate fully for the baneful effect of this temperament. It were better had those who are thus constituted chosen some other vocation than the practice of medicine. Other physicians are distinguished for always taking the most hopeful view of cases. They look ever on the bright side. Their looks infuse hope, and their words are full of encouragement. The effect is often more powerful than medication. There is, of course, an injudicious extreme in the latter direction, and between this extreme and the opposite there is a golden mean; but if there must be a deviation from this mean, it is desirable that it should incline to hopefulness rather than despondency.

enjoy the same immunity. I refer to organs called glands, which separate from the blood certain of its constituents, either for elimination or other useful purposes. The liver, the kidneys, the pancreas, with some others, constitute this group. It is extremely unusual for acute inflammation to attack these organs.

What has been stated with respect to inflammation is measurably true of other forms of disease which tend to disorganization of structure. Cancer, for example (which I instance because it is well known to be a fatal form of disease), sometimes is seated in vital parts, but it is oftener found in situations where it may produce extensive ravages before life is destroyed; and frequently this, as well as other malignant affections, are confined to portions of the body which may be entirely dispensed with, and are removed by the knife of the surgeon.

The malady called by the pathologist *tuberculosis*, and popularly known as consumption, may seem to be an exceptional instance of a very fatal form of disease, selecting, almost uniformly, a very important organ—the lungs. This fact, however, is less exceptional than it at first appears. For reasons which I shall have occasion to notice in another connection—reasons which account for inflammation of the lungs proving fatal in but a small proportion of cases—a tuberculous affection compromises less the duration of life, and even the chances of recovery, seated in the lungs, than in other vital organs; for example, the brain. Observations prove the correctness of this statement.

The parts of the body which, from their pre-eminent importance, are called *vital*, are by no means so exempt from disturbance of their healthy condition, as they are from the liability to disorganizing affections. This fact gives additional force to the point under illustration. The heart, the brain, and proverbially, the stomach, are extremely prone to disorder. The same is true of the glands that have been mentioned. Their affections, however, are, for the most part, of the kind called *functional*, and, although more or less distressing, do not involve much, if any, immediate danger. In short, I think I am warranted in assuming it to be a general rule in pathology, that the organs, the integrity of which is necessary to life, are least liable to become affected with local diseases tending to destructive effects in the part affected; and at the same time they are perhaps most susceptible to disorders of function attended with little or no danger. Conversely, it follows that disorganizing processes of disease attack by preference parts of the body in which, relatively considered, the situation must be deemed favorable; and to complete the antithesis it may be added as probably true, that the latter are in a less degree prone to those disturbances which are distinguished as functional.

I cannot leave this branch of the subject without citing a single illustration of the point under consideration, which will require some reference to anatomical details. In the foregoing remarks I have spoken of the differences in predisposition to diseases inherent in the different structures of the organism. Instances showing the existence of similar differences, not less important as provisions for the preservation of life, are to be found in different portions of the same structure. What are called the air-tubes of the lungs (technically termed the larynx, trachea, and bronchi), are lined by a membrane. This membrane is subject to inflammation, but it is very rarely the case that acute inflammation extends over its whole extent. The inflammation, in the vast majority of cases, is limited to a portion of the membrane. To what portion it is usually limited, and is it a matter of much consequence what particular portion is affected? The answers to these questions involve the particular illustration to which I wish to call your attention. Acute inflammation of the summit of the air-tube (the larynx) is a very fatal disease. It is apt to destroy life by inducing suffocation in a very short space of time. This was the disease which destroyed our *pater patriæ*—Washington. Agreeably to the pathological rule we have stated, we should expect, what is true, that it is a disease occurring very infrequently. The case of Washington was one of the first recorded as such in the annals of medicine. Acute inflammation seated in the minute ramifications of the bronchi is also a very fatal affection. These tubes are extremely small, and the swelling of the membrane incident to inflammation closes them up; air cannot gain access to the cells of the lungs where the interchange of elements between the blood and air takes place, and the patient dies, as when the windpipe is obstructed, by suffocation. But this form of bronchitis (capillary bronchitis, as it is called) is a very rare disease. When it does occur it is usually in childhood or old age.[1] Inflammation seated between these two is not attended with much suffering, and with very little danger to life. And, thus restricted, inflammation of the mucous membrane of the lungs is one of the most common of the diseases which come under the observation of the practitioner of medicine. It is the ordinary form of bronchitis.

---

[1] The moral objects of sickness, so far as the subjects themselves are concerned, it is evident do not extend to diseases of childhood, and in a limited degree only to those incident to old age. It serves to enhance the evidence of design here, and in other instances, to bear this consideration in mind.

We have thus in the laws regulating the *seat* of disease, clearly exhibited a *principle of conservatism* (vis conservatrix). Whence is it derived? Is it due to chance? Certainly it is as unphilosophical not to recognize therein Divine design, as it would be to deny that the hand of Providence is displayed in other provinces of nature in which science develops adaptations of means to ends universally attributed to the infinite Intelligence and creative Power of which Nature is the ideal representative. We educe the evidences of design from the natural history of diseases precisely as when, reasoning from final causes, we "look thro' nature up to nature's God" in the wonders of astronomy, of physiology, or any of the natural sciences.

An appreciation of this conservative principle should serve to reconcile us to the comparatively trivial maladies which we often thoughtlessly regard with petulant dissatisfaction. Let it be considered, for example, that if the formation of a little matter, deeply seated, at the end of the finger, which, in vulgar parlance, is stigmatized by the title of a *felon*, had by an *error loci* been situated in the brain, a fatal affection would have taken the place of one which is only painful! The small ulceration upon which the impatient man does not bestow his blessings, for the reason that it withdraws him for a few days from his active occupation, had it been seated in the stomach or some other vital organ, instead of a part where it involves not the least danger, would have brought to an end his career of worldly activity. Even the single small intrusive pustule marring for a brief period the beauty of the face, and which, although *physically* nothing more than a little *morbid humor*, yet gives rise *mentally* sometimes to a great deal of *ill humor;* this small pustule transferred elsewhere might constitute an incurable, fatal affection.

It is a law of pathology that, in general, a disease seated in one part is limited to that part, not extending to other structures however close their proximity. This law is manifestly designed for protection against an unlimited diffusion of disease. I will content myself with citing one of the number of instances in which the preservation of life is secured by its operation. Every one is familiar with the fact that acute inflammation of the throat proper (the pharynx) is of common occurrence. One of the forms of acute inflammation seated in this part is the painful affection known by the name Quinsy (tonsillitis). This affection, as is well known, although distressing, is not dangerous. Now the larynx, or the summit of the windpipe, opens into the throat, or pharynx, and we have already had occasion to refer to the very great danger which attends acute inflammation seated in that portion of the air-tubes. Were it the case that in quinsy the inflammation often extended into the larynx, it would be one of the most serious of diseases; but although the two parts are in immediate juxtaposition, a free communication existing between them, an extension of the inflammation from the one to the other is so infrequent that it is regarded, when it does occur, as a species of accident.

What renders this instance more interesting is the fact that the tissue (the mucous membrane) lining the pharynx and larynx is similar in structure. Illustrations are much more numerous in which diseases are limited to a particular tissue, not extending to other tissues differing in structure, although situated in actual contact. For example, inflammation affecting one of the membranes investing the brain, so delicate in structure that it is with difficulty separated by the anatomist sufficiently to demonstrate its presence (the arachnoid), never extends to another investing membrane (the dura mater), although the two membranes are in apposition, the one lying beneath and in absolute contact with the other.

The quantity of some of the vital organs of the body gives rise to manifestations of design in certain of the diseases to which they are subject. The brain with its nerves, and the lungs, as you are probably aware, consist of symmetrical halves, united together, but to a certain extent isolated from, and independent of, each other. Owing to this anatomical arrangement, there may exist an affection of one side, or hemisphere, as it is called, of the brain—for example, effusion of blood—paralyzing one-half of the body laterally, leaving feeling and motion in the other half intact, and the intellectual faculties not necessarily much, if at all, impaired. Under these circumstances life may be preserved for an indefinite period. The condition of a person thus affected is truly pitiable, yet contrasted with death, which would have been the result but for the peculiarity of conformation, we are bound to consider it as exemplifying a principle of conservatism.

The lungs afford illustrations of this principle still more conspicuous. Nature has been so bountiful in the amplitude of these organs, that even one-half may be spared without necessarily compromising life. In chronic pleurisy the chest, on one side, becomes filled with liquid effusion, compressing the lung on that side into a small space, and interrupting completely the exercise of its functions. In a very large proportion of cases of this description, recovery takes place under judicious management; and patients with one-half of the chest filled with liquid, the lung contained therein being for the time entirely useless, are not infrequently able to walk about, and even continue occupations requiring considerable manual labor. It is evident that were both sides of the chest to be thus affected, the condition would be incompatible with life. The liability to this is prevented by a law of pleurisy that, in the vast majority of instances, the disease is confined to one side. Cases of what is called double pleurisy are rare exceptions to the general rule. A similar law obtains with respect to inflammation of the lung-substance, or what is understood by the phrase, "inflammation of the lungs," or "lung fever" (pneumonia). In a great majority of cases, this affection is limited to about a fifth part of the whole organ, namely, to one of the several portions partially separated from each other, and distinguished as the *lobes* of the lung. Two, or even three lobes may be implicated, but it is extremely rare for the lobes on both sides to be simultaneously inflamed. Owing to this law, inflammation of the lungs, in the great majority of cases, ends in recovery.

Even the natural history of that most fatal of diseases, pulmonary consumption, is not without striking provisions against results which would render it much more rapidly and surely fatal. These are well known to the pathologist, but it would occupy too much of your time to endeavor to explain them on this occasion.

Examples betokening a principle of conservatism in pathological laws might be multiplied indefinitely. There is hardly a single malady altogether free from exemplifications of this principle. To exhaust the subject would require a great number of discourses; and, in fact, to do justice to the extent to which the evidences of divine design are manifested in the natural history of diseases, the subject must be made incidental to the study of all the diseases embraced in the nosological catalogue. A host of striking illustrations are included in the following general statement: *Diseases for the most part have an intrinsic tendency to end without destroying life.*

Observers of the phenomena of disease in all ages have been impressed with the truth of this statement. The father of medicine, as he is called, Hippocrates, entertained the belief that the morbid processes underlying the appreciable events of disease, were conservative efforts of nature to free the system from noxious agents, either received from without, or generated within the body. The great physician of the 17th century, the English Hippocrates, Sydenham, advocated a similar opinion, and the investigations of modern science have developed, and are constantly developing facts which appear to demonstrate that often, to say the least, this doctrine is not far from the truth. Indeed, to so great an extent is design evinced in the spontaneous evolutions of diseases, that past medical theories emanating from men of learning and genius, have recognized the presence of an immaterial intelligence residing in the organism, distinct from the intellect and soul, whose office it was supposed is to superintend and direct the vital operations both of health and disease. Such were the *archæus* of Van Helmont, and the *anima* of Stahl, two distinguished theorists of the seventeenth century. Nor have these or similar views yet ceased to have an influence on our ideas and language. We now think and speak of the vital *principle* as an intelligent agent, presiding over the phenomena of life; and the *vis medicatrix naturæ*, the recuperative force of nature, is referred to as the volitional activity of a personified entity.

Popular notions respecting the self-adjustive and restorative power inherent in the system, and respecting the extent to which morbid conditions are amenable to medicinal agencies, are often, if not generally, quite erroneous. It appears to be commonly supposed that nearly all diseases have a destructive tendency, which it is the object of the art of medicine to obviate; that each disease has, or should have (were the science of medicine perfect), its peculiar remedy or remedies, the curative efficacy of which depends on their opposing obstacles to, or summarily arresting morbid processes. Such is the mode of the operation of certain medicinal agents. These are usually called specific remedies. They are few in number. Much oftener is it the province of the skilful practitioner of medicine to endeavor to remove opposing obstacles, and to promote the natural course of disease, being sure that if this course be unobstructed and facilitated, the safety of the patient is better secured than by officious interference; and the more the natural history of diseases is studied, the more extensive is found to be the application of this rule of medical practice. Let it not be said that this confession derogates from the dignity or usefulness of the science and profession of medicine. To know when active interference is injudicious, and consequently injurious, if not destructive, involves not less an amount of knowledge of the laws of disease, not less the exercise of judgment and skill, and much more firmness and moral courage than to decide on the employment of powerful measures. It is by abstaining from potent remedies when not needed, quite as much by boldly resorting to them under the proper indications, that (to quote an expression for which some have a fondness) the physician acquires the claim to the title of the *heroic* practitioner.

To avoid misapprehension in these few remarks on a point which, if time permitted, it might be interesting to consider at greater length, let me say I do not mean to be understood to take the position that all diseases, at all times, exhibit an intrinsic tendency toward recovery. The rule is by no means without signal exceptions. Some epidemic affections, cholera for example, are undoubtedly characterized by an opposite tendency. Were we to speculate on the significance of the fatality attending the occasional visitations of cholera and other pestilential diseases, we should find grounds for the belief that they are designed for particular ends—that is, for discipline or punishment, exclusive of the moral ends for which ordinary maladies are instituted. In other words, that they are special dispensations of Providence, ordained for purposes which it would be presumptuous for finite intelligence to attempt to fathom. This view is consistent with the eccentricities which belong to these diseases, and in a scientific point of view, the peculiar mystery which shrouds their origin.

In conclusion, ladies and gentlemen, if I may presume a few moments longer on your attention, I will offer some remarks on death, or more properly, the act of dying. The subject of my discourse may properly enough be extended to embrace those circumstances connected with the yielding up of life, which fall within the province of pathology—the closing events, in other words, in certain cases of disease. With the current notions on this subject, one would hardly expect to find in the circumstances attendant on the bed of death, impressive illustrations of Divine design. Yet it is not surprising that providential wisdom and beneficence should be here displayed, especially if we take into view a fact implied in Scripture, according to the views of learned biblical[1] commentators, namely, that the means of rendering human existence immortal, on the earth, were denied to our first parents, after the fall, as an act of clemency. It is commonly supposed that the act of dying is attended with exquisite suffering: that the separation of the soul from the body occasions unutterable distress. "The last agony," and "the pangs of death," are phrases in daily use. The idea conveyed by such expressions is very far from the truth. On this point I can speak from considerable observation, the practical duties of my profession having led me to witness a large number of deaths.

The instances in which much pain or physical anguish is experienced during the last moments of life, are relatively few: they are rare exceptions to the general rule. In a large proportion of diseases, death is preceded by what is termed *coma*—a state of mental insensibility. This condition is induced for hours, and sometimes days, prior to the extinction of life. During the comatose state, and especially during what is called the "death struggle," there are present, it is true, the appearances of great distress. The gasping respiration—the "death rattle"—the distorted features, and occasionally even the groans of the dying, are indications, to the spectator, of intense suffering. These are the automatic efforts of departing life, involving neither volition nor consciousness. Under such circumstances, pain cannot exist, for the mental perceptions are already extinct. Persons who fall into a state of coma, and afterward recover, retain no recollection of suffering while in that state, notwithstanding the symptoms may, from the association of ideas, have appeared to denote distress. Physiology gives us an explanation of these facts, by showing that the functions immediately concerned in the maintenance of life, are independent of parts of the nervous system standing in direct relation to the faculties of the mind, and that hence vital death—if the antithesis be allowable—may be preceded, for a greater or less period, by mental death.[1]

---

[1] See Genesis 3:22. "And the Lord God said, Behold the man is become as one of us, to know good and evil; and now, lest he put forth his hand and take also of the tree of life, and eat and live forever: therefore the Lord God sent him forth from the garden of Eden," etc.

But even in cases in which the mind is retained until the expiring breath, the moribund state is usually quite free from actual pain or distress. The perceptions become blunted, so that the morbid conditions which, up to that time, may have occasioned suffering, cease to produce this effect. It is very common, at the near approach of death, for patients to experience such marked relief that they imagine a favorable change must have taken place. Physicians well know that in the course of dangerous diseases, it is of bad omen for the patient to express a consciousness of great improvement. "I am much better," is the declaration often accompanying a change which has taken away all ground for the hope of recovery.

---

[1] Not to be misapprehended by this language—which is employed for the sake of antithesis—I wish to say that I would, on no account, be understood to imply an opinion that the mind becomes extinct at death. By the expression mental death, I mean only the change incident to the ending of mortal life.

Ordinarily, in the instances in which coma does not precede death, the patient lapses into a semi-unconscious, dreamy condition, toward the close of existence. In this condition the disconnected ideas which float through the mind usually pertain to the occupation or prominent events of the past life. Thus Napoleon, a few moments before dissolution, fancied himself on the field of battle, as shown by the last words, *tête d'armée*, which escaped his lips. A venerable schoolmaster—Dr. Adams, of the Edinburgh High School—in his last moments, thought himself in his school-room, and died, shortly after saying, "It is beginning to grow dark; let the boys be dismissed!"[1]

Persons in a moribund state, not infrequently, so far as their own sensations are concerned, appear in an agreeable slumber, save when disturbed by efforts made to arouse them, or by injudicious persistence in the administration of remedies. "I must sleep now!" was the exclamation of Byron, shortly before he breathed his last. Death and sleep personified, have been styled, poetically, twin-sisters. The one sometimes appears at the bed of sickness with attractions scarcely less winning than those which make the visits of the other so acceptable!

The act of dying thus, pathologically or historically, affords evidence of design, inasmuch as therein is exemplified, in a striking manner, the divine attribute of mercy. The subject, however, interesting as it may be in that aspect, considered abstractly, is rendered still more so from its personal relations. With reference to that experimental knowledge which awaits each one of us, and to the individual experience of those whom we love, the question whether the general views that have now been presented are correct, is one of moment. I have not time to treat of the subject as fully as its importance claims, but I reiterate the opinion that the closing act of mortal life, even exclusive of the instances in which it takes place without consciousness, is very rarely accompanied by great distress, and is often characterized by marked relief of previous sufferings. Many die without having a suspicion of the approach of that event; and it is difficult, and even impossible sometimes, to convince the dying person that he is in immediate danger, so little do his own feelings foreshadow dissolution. Most interesting is the testimony which several distinguished individuals have left behind them, of the painlessness, and even pleasure, of the act of dying! An eminent physician—Dr. Black—shortly before breathing his last, exclaimed, "Oh that I could hold a pen, I would write how pleasant a thing it is to die!" Prof. Dickson, of Charleston, S. C., in an essay on the subject of death, says, a lady, a patient of his, once exclaimed, "Is it possible I am dying? I feel as if going into a sweet sleep."[1] I have myself heard similar expressions on such occasions. Persons resuscitated after submersion or hanging, have repeatedly declared that the loss of consciousness occurred without pain; and indeed, there are grounds to believe that, after the shock of arresting respiration in these modes of dying, during the brief period which elapses before complete insensibility takes place, the sensations are of a pleasurable character.[1]

---

[1] Prof. Dickson's Essay on Death.

---

[1] Prof. D., in the essay referred to—Essays on Life, Sleep, Pain, etc., by Samuel Henry Dickson, M.D.—expresses an opinion the reverse of that entertained by the author of this discourse. I am, however, unable to perceive convincing force in his remarks on this point.

In remarking on the suffering incident to dying, I have of necessity had occasion to take into consideration mental conditions so far as concerns sensation, consciousness, and volition. I shall now venture a step farther, and state my conclusions, drawn from personal observations, respecting the effect *produced on the mind by the anticipation of impending dissolution.* On this point I believe the popular impression to be not less at fault than on that just considered. Much is said from the pulpit, and elsewhere, of the terror and mental agony which belongs to the death-bed of the impenitent; and, if I mistake not, it is generally supposed by those who reflect upon such subjects, that the approach of death is regarded always with awe and painful apprehensions.[2] It has been my lot to observe many cases of disease that have proceeded to a fatal issue; and the fatal cases that have fallen under my notice have embraced all classes of society: the ignorant, the abandoned, and the skeptic, as well as the educated, the virtuous, and the believer. I have witnessed beautiful, and I would add sublime exhibitions of pious faith called forth by the prospect of dissolution. I rejoice in an opportunity to bear publicly my testimony to the joy and exultation with which the Christian believer is enabled to prepare for the approach of death. But I am bound to say that I have not met with instances in which the fatal issue of disease appeared to be contemplated with that fearful anxiety thought by many to be the necessary consequence of the absence of religious sentiments. Many persons, on the bed of sickness, manifest utter apathy as to the result, not asking for information as to the probabilities of recovery with any earnestness, and frequently making no allusion to the subject. How different would the case be in a suit at law, for example, involving the loss or gain of a few thousand dollars! If the opinion of the physician be asked, and a discouraging answer given, the only emotions excited are those of surprise and disappointment. I cannot affirm that I have ever seen a recoiling from the conviction that the hour of death was at hand, with that fright or horror with which, in health, this event as a remote certainty, at times, I suppose, presents itself to the mind of every one. I do not deny that instances as terrific as those which some writers have described do occur. I only say that with considerable opportunities for observation in hospitals, almshouses and jails, as well as in private practice, such instances have not come within my personal knowledge. It is certain that they are only occasional in their occurrence.

---

[1] While engaged in writing this discourse I noticed in the newspapers an account of an execution, by hanging, in which the rope broke, and the poor criminal was resuscitated to be again suspended after an interval of half an hour. He had met his fate with perfect resignation, sustained by religious faith, continuing to invoke Divine assistance till the moment of the execution arrived. After the resuscitation he declared he had seen the countenance of the Saviour, and desired to be quickly again suspended that the pleasing image might be repeated. Such, in substance, was the newspaper account. The idea of meeting the Saviour which probably had been uppermost and all-absorbing on the scaffold, during the brief passage to insensibility assumed the character of a vision, leaving on the mind the conviction of its reality. Certainly this was incompatible with suffering.

[2] Death, personified, is styled the "King of Terrors."

I trust that in these remarks no one will do me the injustice to impute to me a desire to depreciate the importance of solemn warnings against neglect of preparation for death. I am only constrained to think that these warnings should not be based on the moral, more than the physical, anguish of the dying hour. Truth can never injure the cause of truth. If observation teach us that the mind is usually so modified by severe disease as not to regard the prospect of dissolution with a proper appreciation of its momentous importance, it cannot but subserve the interests of mankind for the fact to be clearly understood. To treat of the bearing of this fact on the danger of deferring proper attention to the subject of death till we are brought into close proximity to the event itself, and other relations of a kindred character, would be inappropriate on an occasion like the present, even if the requisite assurance on my part were not wanting, and I had not already trespassed too much on your patience.

CATALOGUE OF BOOKS

PUBLISHED BY

HENRY C. LEA.

(LATE LEA & BLANCHARD.)

The books in the annexed list will be sent by mail, post-paid, to any Post Office in the United States, on receipt of the printed prices. No risks of the mail, however, are assumed, either on money or books. Gentlemen will therefore, in most cases, find it more convenient to deal with the nearest bookseller.

Detailed catalogues furnished or sent free by mail on application. An illustrated catalogue of 64 octavo pages, handsomely printed, mailed on receipt of 10 cents. Address,

HENRY C. LEA,
Nos. 706 and 708 Sansom Street, Philadelphia.

PERIODICALS,

Free of Postage.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES. Edited by Isaac Hays, M.D., published quarterly, about 1100 large 8vo. pages per annum,	For five Dollars per annum, in advance.
MEDICAL NEWS AND LIBRARY, monthly, 384 large 8vo. pages per annum,	

OR,

AMERICAN JOURNAL OF THE MEDICAL SCIENCES, Quarterly,	For six Dollars per annum, in advance.
MEDICAL NEWS AND LIBRARY, monthly,	
MONTHLY ABSTRACT OF MEDICAL SCIENCE, 48 pages per month, or nearly 600 pages per annum.	
In all, about 2100 large 8vo. pages per annum,	

MEDICAL NEWS AND LIBRARY, monthly, in advance, $1 00.

MONTHLY ABSTRACT OF MEDICAL SCIENCE, in advance, $2 50.

OBSTETRICAL JOURNAL. With an American Supplement, edited by J. V. INGHAM, M.D. $5 00 per annum, in advance. Single Numbers, 50 cents. Is published monthly, each number containing about eighty octavo pages. Commencing with April, 1873.

ASHTON (T. J.) ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE RECTUM AND ANUS. With remarks on Habitual Constipation. Second American from the fourth London edition, with illustrations. 1 vol. 8vo. of about 300 pp. Cloth, $3 25.

ASHWELL (SAMUEL). A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. Third American from the third London edition. In one 8vo. vol. of 528 pages. Cloth, $3 50.

ASHHURST (JOHN, Jr.) THE PRINCIPLES AND PRACTICE OF SURGERY. FOR THE USE OF STUDENTS AND PRACTITIONERS. In 1 large 8vo. vol. of over 1000 pages, containing 533 wood-cuts. Cloth, $6 50; leather, $7 50.

ATTFIELD (JOHN). CHEMISTRY: GENERAL, MEDICAL, AND PHARMACEUTICAL. Fifth edition, revised by the author. In 1 vol. 12mo. Cloth, $2 75; leather, $3 25.

ANDERSON (McCALL). ON THE TREATMENT OF DISEASES OF THE SKIN. In one small 8vo. vol. Cloth, $1 00.

BLOXAM (C. L.) CHEMISTRY, INORGANIC AND ORGANIC. With Experiments. In one handsome octavo volume of 700 pages, with 300 illustrations. Cloth, $4 00; leather, $5 00.

BRINTON (WILLIAM). LECTURES ON THE DISEASES OF THE STOMACH. From the second London edition, with illustrations. 1 vol. 8vo. Cloth, $3 25.

BRUNTON (T. LAUDER). A MANUAL OF MATERIA MEDICA AND THERAPEUTICS. In one 8vo. volume. (*Preparing.*)

BIGELOW (HENRY J.) ON DISLOCATION AND FRACTURE OF THE HIP, with the Reduction of the Dislocations by the Flexion Method. In one 8vo. vol. of 150 pp., with illustrations. Cloth, $2 50.

BASHAM (W. R.) RENAL DISEASES; A CLINICAL GUIDE TO THEIR DIAGNOSIS AND TREATMENT. With illustrations. 1 vol. 12mo. Cloth, $2 00.

BUMSTEAD (F. J.) THE PATHOLOGY AND TREATMENT OF VENEREAL DISEASES. Including the results of recent investigations upon the subject. Third edition, revised and enlarged, with illustrations. 1 vol. 8vo., of over 700 pages. Cloth, $5; leather, $6.

—— **AND CULLERIER'S** ATLAS OF VENEREAL. See "CULLERIER."

BARLOW (GEORGE H.) A MANUAL OF THE PRACTICE OF MEDICINE. 1 vol. 8vo., of over 600 pages. Cloth, $2 50.

BAIRD (ROBERT). IMPRESSIONS AND EXPERIENCES OF THE WEST INDIES. 1 vol. royal 12mo. Cloth, 75 cents.

BARNES (ROBERT). A PRACTICAL TREATISE ON THE DISEASES OF WOMEN. In one handsome 8vo. vol. of about 800 pages, with 169 illustrations. Cloth, $5; leather, $6. (*Lately issued.*)

BRYANT (THOMAS). THE PRACTICE OF SURGERY. In one handsome octavo volume, of over 1000 pages, with many illustrations. Cloth, $6 25; leather, $7 25. (*Lately issued.*)

BLANDFORD (G. FIELDING). INSANITY AND ITS TREATMENT. With an Appendix of the laws in force in the United States on the Confinement of the Insane, by Dr. Isaac Ray. In one handsome 8vo vol., of 471 pages. Cloth, $3 25.

BELLAMY'S MANUAL OF SURGICAL ANATOMY. With numerous illustrations. In one royal 12mo. vol. Cloth, $2 25. (*Lately issued.*)

BOWMAN (JOHN E.) A PRACTICAL HAND-BOOK OF MEDICAL CHEMISTRY. Edited by C. L. Bloxam. Sixth American, from the fourth and revised London edition. With numerous illustrations. 1 vol. royal 12mo. of 350 pages. Cloth, $2 25.

—— INTRODUCTION TO PRACTICAL CHEMISTRY, INCLUDING ANALYSIS. Edited by C. L. Bloxam. Sixth American, from the sixth and revised London edition, with numerous illustrations. 1 vol. royal 12mo. of 350 pages. Cloth, $2 25.

CHAMBERS (T. K.) A MANUAL OF DIET IN HEALTH AND DISEASE. In one handsome octavo volume of 310 pages. Cloth, $2 75. (*Just issued.*)

—— RESTORATIVE MEDICINE. An Harveian Annual Oration delivered at the Royal College of Physicians, London, June 21, 1871. In one small 12mo. volume. Cloth, $1 00.

COOPER (B. B.) LECTURES ON THE PRINCIPLES AND PRACTICE OF SURGERY. In one large 8vo. vol. of 750 pages. Cloth, $2 00.

CARPENTER (WM. B.) PRINCIPLES OF HUMAN PHYSIOLOGY, WITH THEIR CHIEF APPLICATIONS TO PSYCHOLOGY, PATHOLOGY, THERAPEUTICS, HYGIENE, AND FORENSIC MEDICINE. In one large vol. 8vo., of nearly 900 closely printed pages. Cloth, $5 50; leather, raised bands, $6 50.

—— PRIZE ESSAY ON THE USE OF ALCOHOLIC LIQUORS IN HEALTH AND DISEASE. New edition, with a Preface by D. F. Condie, M.D. 1 vol. 12mo. of 178 pages. Cloth, 60 cents.

CHRISTISON (ROBERT). DISPENSATORY OR COMMENTARY ON THE PHARMACOPŒIAS OF GREAT BRITAIN AND THE UNITED STATES. With a Supplement by R. E. Griffith. In one 8vo. vol. of over 1000 pages, containing 213 illustrations. Cloth, $4.

CHURCHILL (FLEETWOOD). ON THE THEORY AND PRACTICE OF MIDWIFERY. With notes and additions by D. Francis Condie, M.D. With about 200 illustrations. In one handsome 8vo. vol. of nearly 700 pages. Cloth, $4; leather, $5.

—— ESSAYS ON THE PUERPERAL FEVER, AND OTHER DISEASES PECULIAR TO WOMEN. In one neat octavo vol. of about 450 pages. Cloth, $2 50.

CONDIE (D. FRANCIS). A PRACTICAL TREATISE ON THE DISEASES OF CHILDREN. Sixth edition, revised and enlarged. In one large octavo volume of nearly 800 pages. Cloth, $5 25; leather, $6 25.

CULLERIER (A.) AN ATLAS OF VENEREAL DISEASES. Translated and edited by FREEMAN J. BUMSTEAD, M.D. A large imperial quarto volume, with 26 plates containing about 150 figures, beautifully colored, many of them the size of life. In one vol., strongly bound in cloth, $17.

—— Same work, in five parts, paper covers, for mailing, $3 per part.

CYCLOPEDIA OF PRACTICAL MEDICINE. By Dunglison, Forbes, Tweedie, and Conolly. In four large super-royal octavo volumes, of 3254 double-columned pages, leather, raised bands, $15. Cloth, $11.

CAMPBELL'S LIVES OF LORDS KENYON, ELLENBOROUGH, AND TENTERDEN. Being the third volume of "Campbell's Lives of the Chief Justices of England." In one crown octavo vol. Cloth, $2.

DALTON (J. C.) A TREATISE ON HUMAN PHYSIOLOGY. Sixth edition, thoroughly revised, and greatly enlarged and improved, with 316 illustrations. In one very handsome 8vo. vol. of 830 pp. Cloth, $5 50; leather, $6 50. (*Now ready.*)

DAVIS (F. H.) LECTURES ON CLINICAL MEDICINE. Second edition, revised and enlarged. In one 12mo. vol. Cloth, $1 75.

DON QUIXOTE DE LA MANCHA. Illustrated edition. In two handsome vols. crown 8vo. Cloth, $2 50; half morocco, $3 70.

DEWEES (W. P.) A TREATISE ON THE DISEASES OF FEMALES. With illustrations. In one 8vo. vol. of 536 pages. Cloth, $3.

—— A TREATISE ON THE PHYSICAL AND MEDICAL TREATMENT OF CHILDREN. In one 8vo. vol. of 548 pages. Cloth, $2 80.

DRUITT (ROBERT). THE PRINCIPLES AND PRACTICE OF MODERN SURGERY. A revised American, from the eighth London edition. Illustrated with 432 wood engravings. In one 8vo. vol. of nearly 700 pages. Cloth, $4; leather, $5.

DUNGLISON (ROBLEY). MEDICAL LEXICON; a Dictionary of Medical Science. Containing a concise explanation of the various subjects and terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, and Dentistry. Notices of Climate and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations, with the accentuation and Etymology of the Terms, and the French and other Synonymes. In one very large royal 8vo. vol. New edition. Cloth, $6 50; leather, $7 50. (*Just issued.*)

—— HUMAN PHYSIOLOGY. Eighth edition, thoroughly revised. In two large 8vo. vols. of about 1500 pp., with 532 illus. Cloth, $7.

—— NEW REMEDIES, WITH FORMULÆ FOR THEIR PREPARATION AND ADMINISTRATION. Seventh edition. In one very large 8vo. vol. of 770 pages. Cloth, $4.

DE LA BECHE'S GEOLOGICAL OBSERVER. In one large 8vo. vol. of 700 pages, with 300 illustrations. Cloth, $4.

DANA (JAMES D.) THE STRUCTURE AND CLASSIFICATION OF ZOOPHYTES. With illustrations on wood. In one imperial 4to. vol. Cloth, $4 00.

ELLIS (BENJAMIN). THE MEDICAL FORMULARY. Being a collection of prescriptions derived from the writings and practice of the most eminent physicians of America and Europe. Twelfth edition, carefully revised by A. H. Smith, M. D. In one 8vo. volume of 374 pages. Cloth, $3.

ERICHSEN (JOHN). THE SCIENCE AND ART OF SURGERY. A new and improved American, from the sixth enlarged and revised London edition. Illustrated with 630 engravings on wood. In two large 8vo. vols. Cloth, $9 00; leather, raised bands, $11 00.

ENCYCLOPÆDIA OF GEOGRAPHY. In three large 8vo. vols. Illustrated with 83 maps and about 1100 wood-cuts. Cloth, $5.

FENWICK (SAMUEL). THE STUDENTS' GUIDE TO MEDICAL DIAGNOSIS. From the Third Revised and Enlarged London Edition. In one vol. royal 12mo., with numerous illustrations. Cloth, $2 25. (*Just issued.*)

FLETCHER'S NOTES FROM NINEVEH, AND TRAVELS IN MESOPOTAMIA, ASSYRIA, AND SYRIA. In one 12mo. vol. Cloth, 75 cts.

FOX ON DISEASES OF THE STOMACH. From the third London edition. In one octavo vol. Cloth, $2. (*Just issued.*)

FLINT (AUSTIN). A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. Fourth edition, thoroughly revised and enlarged. In one large 8vo. volume of 1070 pages. Cloth, $6; leather, raised bands, $7. (*Just issued.*)

—— A PRACTICAL TREATISE ON THE PHYSICAL EXPLORATION OF THE CHEST, AND THE DIAGNOSIS OF DISEASES AFFECTING THE RESPIRATORY ORGANS. Second and revised edition. One 8vo. vol. of 595 pages. Cloth, $4 50.

—— A PRACTICAL TREATISE ON THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE HEART. Second edition, enlarged. In one neat 8vo. vol. of over 500 pages, $4 00.

—— ON PHTHISIS: DIAGNOSIS, PROGNOSIS, AND TREATMENT, in a series of Clinical Lectures. A new work. In one handsome 8vo. volume. (*In press.*)

—— MEDICAL ESSAYS. In one neat 12mo. volume. Cloth, $1 38.

FOWNES (GEORGE). A MANUAL OF ELEMENTARY CHEMISTRY. From the tenth enlarged English edition. In one royal 12mo. vol. of 857 pages, with 197 illustrations. Cloth, $2 75; leather, $3 25.

FULLER (HENRY). ON DISEASES OF THE LUNGS AND AIR PASSAGES. Their Pathology, Physical Diagnosis, Symptoms, and Treatment. From the second English edition. In one 8vo. vol. of about 500 pages. Cloth, $3 50.

GALLOWAY (ROBERT). A MANUAL OF QUALITATIVE ANALYSIS. From the fifth English edition. In one 12mo. vol. Cloth, $2 50. (*Lately published.*)

GLUGE (GOTTLIEB). ATLAS OF PATHOLOGICAL HISTOLOGY. Translated by Joseph Leidy, M.D., Professor of Anatomy in the University of Pennsylvania, &c. In one vol. imperial quarto, with 320 copperplate figures, plain and colored. Cloth, $4.

GREEN (T. HENRY). AN INTRODUCTION TO PATHOLOGY AND MORBID ANATOMY. In one handsome 8vo. vol., with numerous illustrations. Cloth, $2 50.

GIBSON'S INSTITUTES AND PRACTICE OF SURGERY. In two 8vo. vols. of about 1000 pages, leather, $6 50.

GRAY (HENRY). ANATOMY, DESCRIPTIVE AND SURGICAL. A new American, from the fifth and enlarged London edition. In one large imperial 8vo. vol. of about 900 pages, with 462 large and elaborate engravings on wood. Cloth, $6; leather, $7. (*Lately issued.*)

GRIFFITH (ROBERT E.) A UNIVERSAL FORMULARY, CONTAINING THE METHODS OF PREPARING AND ADMINISTERING OFFICINAL AND OTHER MEDICINES. Third and Enlarged edition. Edited by John M. Maisch. In one large 8vo. vol. of 800 pages, double columns. Cloth, $4 50; leather, $5 50.

GROSS (SAMUEL D.) A SYSTEM OF SURGERY, PATHOLOGICAL, DIAGNOSTIC, THERAPEUTIC, AND OPERATIVE. Illustrated by 1403 engravings. Fifth edition, revised and improved. In two large imperial 8vo. vols. of over 2200 pages, strongly bound in leather, raised bands, $15. (*Lately issued.*)

—— A PRACTICAL TREATISE ON FOREIGN BODIES IN THE AIR PASSAGES. In one 8vo. vol. of 468 pages. Cloth, $2 75.

GUERSANT (P.) SURGICAL DISEASES OF INFANTS AND CHILDREN. Translated by R. J. Dunglison, M. D. In one 8vo. vol. Cloth, $2 50.

HUDSON (A.) LECTURES ON THE STUDY OF FEVER. 1 vol. 8vo., 316 pages. Cloth, $2 50.

HEATH (CHRISTOPHER). PRACTICAL ANATOMY; A MANUAL OF DISSECTIONS. With additions, by W. W. Keen, M. D. In 1 volume; with 247 illustrations. Cloth, $3 50; leather, $4.

HARTSHORNE (HENRY). ESSENTIALS OF THE PRINCIPLES AND PRACTICE OF MEDICINE. Fourth and revised edition. In one 12mo. vol. Cloth, $2 63; half bound, $2 88. (*Lately issued.*)

—— CONSPECTUS OF THE MEDICAL SCIENCES. Comprising Manuals of Anatomy, Physiology, Chemistry, Materia Medica, Practice of Medicine, Surgery, and Obstetrics. Second Edition. In one royal 12mo. volume of over 1000 pages, with 477 illustrations. Strongly bound in leather, $5 00; cloth, $4 25. (*Lately issued.*)

—— A HANDBOOK OF ANATOMY AND PHYSIOLOGY. In one neat royal 12mo. volume, with many illustrations. Cloth, $1 75.

HAMILTON (FRANK H.) A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. Fifth edition, carefully revised. In one handsome 8vo. vol. of 830 pages, with 344 illustrations. Cloth, $5 75; leather, $6 75. (*Now ready.*)

HOLMES (TIMOTHY). A MANUAL OF PRACTICAL SURGERY. In one handsome 8vo. volume, with many illustrations. (*Preparing.*)

HOBLYN (RICHARD D.) A DICTIONARY OF THE TERMS USED IN MEDICINE AND THE COLLATERAL SCIENCES. In one 12mo. volume, of over 500 double-columned pages. Cloth, $1 50; leather, $2.

HODGE (HUGH L.) ON DISEASES PECULIAR TO WOMEN, INCLUDING DISPLACEMENTS OF THE UTERUS. Second and revised edition. In one 8vo. volume. Cloth, $4 50.

—— THE PRINCIPLES AND PRACTICE OF OBSTETRICS. Illustrated with large lithographic plates containing 159 figures from original photographs, and with numerous wood-cuts. In one large quarto vol. of 550 double-columned pages. Strongly bound in cloth, $14.

HOLLAND (SIR HENRY). MEDICAL NOTES AND REFLECTIONS. From the third English edition. In one 8vo. vol. of about 500 pages. Cloth, $3 50.

HODGES (RICHARD M.) PRACTICAL DISSECTIONS. Second edition. In one neat royal 12mo. vol., half bound, $2.

HUGHES. SCRIPTURE GEOGRAPHY AND HISTORY, with 12 colored maps. In 1 vol. 12mo. Cloth, $1.

HORNER (WILLIAM E.) SPECIAL ANATOMY AND HISTOLOGY. Eighth edition, revised and modified. In two large 8vo. vols. of over 1000 pages, containing 300 wood-cuts. Cloth, $6.

HILL (BERKELEY). SYPHILIS AND LOCAL CONTAGIOUS DISORDERS. In one 8vo. volume of 467 pages. Cloth, $3 25.

HILLIER (THOMAS). HAND-BOOK OF SKIN DISEASES. Second Edition. In one neat royal 12mo. volume of about 300 pp., with two plates. Cloth, $2 25.

HALL (MRS. M.) LIVES OF THE QUEENS OF ENGLAND BEFORE THE NORMAN CONQUEST. In one handsome 8vo. vol. Cloth, $2 25; crimson cloth, $2 50; half morocco, $3.

JONES (C. HANDFIELD). CLINICAL OBSERVATIONS ON FUNCTIONAL NERVOUS DISORDERS. Second American Edition. In one 8vo. vol. of 348 pages. Cloth, $3 25.

KIRKES (WILLIAM SENHOUSE). A MANUAL OF PHYSIOLOGY. A new American, from the eighth London edition. One vol., with many illus., 12mo. Cloth, $3 25; leather, $3 75. (*Lately issued.*)

KNAPP (F.) TECHNOLOGY; OR CHEMISTRY, APPLIED TO THE ARTS AND TO MANUFACTURES, with American additions, by Prof. Walter R. Johnson. In two 8vo. vols., with 500 ill. Cloth, $6.

KENNEDY'S MEMOIRS OF THE LIFE OF WILLIAM WIRT. In two vols. 12mo. Cloth, $2.

LEA (HENRY C.) SUPERSTITION AND FORCE; ESSAYS ON THE WAGER OF LAW, THE WAGER OF BATTLE, THE ORDEAL, AND TORTURE. Second edition, revised. In one handsome royal 12mo. vol., $2 75.

—— STUDIES IN CHURCH HISTORY. The Rise of the Temporal Power—Benefit of Clergy—Excommunication. In one handsome 12mo. vol. of 515 pp. Cloth, $2 75.

—— AN HISTORICAL SKETCH OF SACERDOTAL CELIBACY IN THE CHRISTIAN CHURCH. In one handsome octavo volume of 602 pages. Cloth, $3 75.

LA ROCHE (R.) YELLOW FEVER IN ITS HISTORICAL, PATHOLOGICAL, ETIOLOGICAL, AND THERAPEUTICAL RELATIONS. In two 8vo. vols. of nearly 1500 pages. Cloth, $7.

—— PNEUMONIA, ITS SUPPOSED CONNECTION, PATHOLOGICAL AND ETIOLOGICAL, WITH AUTUMNAL FEVERS. In one 8vo. vol. of 500 pages. Cloth, $3.

LINCOLN (D. F.) ELECTRO-THERAPEUTICS. A Condensed Manual of Medical Electricity. In one neat royal 12mo. volume, with illustrations. Cloth, $1 50. (*Just issued.*)

LEISHMAN (WILLIAM). A SYSTEM OF MIDWIFERY. Including the Diseases of Pregnancy and the Puerperal State. In one large and very handsome 8vo. vol. of 700 pages and 182 illus. Cloth, $5; leather, $6.

LAURENCE (J. Z.) AND MOON (ROBERT C.) A HANDY-BOOK OF OPHTHALMIC SURGERY. Second edition, revised by Mr. Laurence. With numerous illus. In one 8vo. vol. Cloth, $2 75.

LEHMANN (C. G.) PHYSIOLOGICAL CHEMISTRY. Translated by George F. Day, M. D. With plates, and nearly 200 illustrations. In two large 8vo. vols., containing 1200 pages. Cloth, $6.

—— A MANUAL OF CHEMICAL PHYSIOLOGY. In one very handsome 8vo. vol. of 336 pages. Cloth, $2 25.

LAWSON (GEORGE). INJURIES OF THE EYE, ORBIT, AND EYELIDS, with about 100 illustrations. From the last English edition. In one handsome 8vo. vol. Cloth, $3 50.

LUDLOW (J. L.) A MANUAL OF EXAMINATIONS UPON ANATOMY, PHYSIOLOGY, SURGERY, PRACTICE OF MEDICINE, OBSTETRICS, MATERIA MEDICA, CHEMISTRY, PHARMACY, AND THERAPEUTICS. To which is added a Medical Formulary. Third edition. In one royal 12mo. vol. of over 800 pages. Cloth, $3 25; leather, $3 75.

LAYCOCK (THOMAS). LECTURES ON THE PRINCIPLES AND METHODS OF MEDICAL OBSERVATION AND RESEARCH. In one 12mo. vol. Cloth, $1.

LYNCH (W. F.) A NARRATIVE OF THE UNITED STATES EXPEDITION TO THE DEAD SEA AND RIVER JORDAN. In one large and handsome octavo vol., with 28 beautiful plates and two maps. Cloth, $3.

—— Same Work, condensed edition. One vol. royal 12mo. Cloth, $1.

LEE (HENRY) ON SYPHILIS. In one handsome 8vo. vol. Cloth, $2 25. (*Now ready.*)

LYONS (ROBERT D.) A TREATISE ON FEVER. In one neat 8vo. vol. of 362 pages. Cloth, $2 25.

MARSHALL (JOHN). OUTLINES OF PHYSIOLOGY, HUMAN AND COMPARATIVE. With Additions by FRANCIS G. SMITH, M. D., Professor of the Institutes of Medicine in the University of Pennsylvania. In one 8vo. volume of 1026 pages, with 122 illustrations. Strongly bound in leather, raised bands, $7 50. Cloth, $6 50.

MACLISE (JOSEPH). SURGICAL ANATOMY. In one large imperial quarto vol., with 68 splendid plates, beautifully colored; containing 190 figures, many of them life size. Cloth, $14.

MEIGS (CHAS. D.). ON THE NATURE, SIGNS, AND TREATMENT OF CHILDBED FEVER. In one 8vo. vol. of 365 pages. Cloth, $2.

MILLER (JAMES). PRINCIPLES OF SURGERY. Fourth American, from the third Edinburgh edition. In one large 8vo. vol. of 700 pages, with 240 illustrations. Cloth, $3 75.

—— THE PRACTICE OF SURGERY. Fourth American, from the last Edinburgh edition. In one large 8vo. vol. of 700 pages, with 364 illustrations. Cloth, $3 75.

MONTGOMERY (W. F.) AN EXPOSITION OF THE SIGNS AND SYMPTOMS OF PREGNANCY. From the second English edition. In one handsome 8vo. vol. of nearly 600 pages. Cloth, $3 75.

MULLER (J.) PRINCIPLES OF PHYSICS AND METEOROLOGY. In one large 8vo. vol. with 550 wood-cuts, and two colored plates. Cloth, $4 50.

MIRABEAU; A LIFE HISTORY. In one royal 12mo. vol. Cloth, 75 cents.

MACFARLAND'S TURKEY AND ITS DESTINY. In 2 vols. royal 12mo. Cloth, $2.

MARSH (MRS.) A HISTORY OF THE PROTESTANT REFORMATION IN FRANCE. In 2 vols. royal 12mo. Cloth, $2.

NELIGAN (J. MOORE). AN ATLAS OF CUTANEOUS DISEASES. In one handsome quarto volume, with beautifully colored plates, &c. Cloth, $5 50.

NEILL (JOHN) AND SMITH (FRANCIS G.) COMPENDIUM OF THE VARIOUS BRANCHES OF MEDICAL SCIENCE. In one handsome 12mo. vol. of about 1000 pages, with 374 wood-cuts. Cloth, $4; leather, raised bands, $4 75.

NIEBUHR (B. G.) LECTURES ON ANCIENT HISTORY; comprising the history of the Asiatic Nations, the Egyptians, Greeks, Macedonians, and Carthagenians. Translated by Dr. L. *Schmitz*. In three neat volumes, crown octavo. Cloth, $5 00.

ODLING (WILLIAM). A COURSE OF PRACTICAL CHEMISTRY FOR THE USE OF MEDICAL STUDENTS. From the fourth revised London edition. In one 12mo. vol. of 261 pp., with 75 illustrations. Cloth, $2.

PAVY (F. W.) A TREATISE ON THE FUNCTION OF DIGESTION, ITS DISORDERS AND THEIR TREATMENT. From the second London ed. In one 8vo. vol. of 246 pp. Cloth, $2. (*Lately issued.*)

—— A TREATISE ON FOOD AND DIETETICS, PHYSIOLOGICALLY AND THERAPEUTICALLY CONSIDERED. In one neat octavo volume of about 500 pages. Cloth, $4 75. (*Just issued.*)

PARRISH (EDWARD). A TREATISE ON PHARMACY. With many Formulæ and Prescriptions. Fourth edition. Enlarged and thoroughly revised by Thomas S. Wiegand. In one handsome 8vo. vol. of 977 pages, with 280 illus. Cloth, $5 50; leather, $6 50. (*Just issued.*)

PIRRIE (WILLIAM). THE PRINCIPLES AND PRACTICE OF SURGERY. In one handsome octavo volume of 780 pages, with 316 illustrations. Cloth, $3 75.

PEREIRA (JONATHAN). MATERIA MEDICA AND THERAPEUTICS. An abridged edition. With numerous additions and references to the United States Pharmacopœia. By Horatio C. Wood, M. D. In one large octavo volume, of 1040 pages, with 236 illustrations. Cloth, $7 00; leather, raised bands, $8 00.

PULSZKY'S MEMOIRS OF AN HUNGARIAN LADY. In one neat royal 12mo. vol. Cloth, $1.

PAGET'S HUNGARY AND TRANSYLVANIA. In two royal 12mo. vols. Cloth, $2.

ROBERTS (WILLIAM). A PRACTICAL TREATISE ON URINARY AND RENAL DISEASES. A second American, from the second London edition. With numerous illustrations and a colored plate. In one very handsome 8vo. vol. of 616 pages. Cloth, $4 50. (*Just issued.*)

RAMSBOTHAM (FRANCIS H.) THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY. In one imperial 8vo. vol. of 650 pages, with 64 plates, besides numerous woodcuts in the text. Strongly bound in leather, $7.

RIGBY (EDWARD). A SYSTEM OF MIDWIFERY. Second American edition. In one handsome 8vo. vol. of 422 pages. Cloth, $2 50.

RANKE'S HISTORY OF THE TURKISH AND SPANISH EMPIRES in the 16th and beginning of 17th Century. In one 8vo. volume, paper, 25 cts.

—— HISTORY OF THE REFORMATION IN GERMANY. Parts I., II., III. In one vol. Cloth, $1.

ROYLE (J. FORBES). MATERIA MEDICA AND THERAPEUTICS. Edited by Jos. Carson, M. D. In one large 8vo. vol. of about 700 pages, with 98 illustrations. Cloth, $3.

SMITH (EUSTACE). ON THE WASTING DISEASES OF CHILDREN. Second American edition, enlarged. In one 8vo. vol. Cloth, $2 50. (*Just issued.*)

SARGENT (F. W.) ON BANDAGING AND OTHER OPERATIONS OF MINOR SURGERY. New edition, with an additional chapter on Military Surgery. In one handsome royal 12mo. vol. of nearly 400 pages, with 184 wood-cuts. Cloth, $1 75.

SMITH (J. LEWIS.) A TREATISE ON THE DISEASES OF INFANCY AND CHILDHOOD. Second edition. In one large 8vo. volume of over 700 pages. Cloth, $5; leather, $6.

SHARPEY (WILLIAM) AND QUAIN (JONES AND RICHARD). HUMAN ANATOMY. With notes and additions by Jos. Leidy, M. D., Prof. of Anatomy in the University of Pennsylvania. In two large 8vo. vols. of about 1300 pages, with 511 illustrations. Cloth, $6.

SKEY (FREDERIC C.) OPERATIVE SURGERY. In one 8vo. vol. of over 650 pages, with about 100 wood-cuts. Cloth, $3 25.

SLADE (D. D.) DIPHTHERIA; ITS NATURE AND TREATMENT. Second edition. In one neat royal 12mo. vol. Cloth, $1 25.

SMITH (HENRY H.) AND HORNER (WILLIAM E.) ANATOMICAL ATLAS. Illustrative of the structure of the Human Body. In one large imperial 8vo. vol., with about 650 beautiful figures. Cloth, $4 50.

SMITH (EDWARD). CONSUMPTION; ITS EARLY AND REMEDIABLE STAGES. In one 8vo. vol. of 254 pp. Cloth, $2 25.

STILLE (ALFRED). THERAPEUTICS AND MATERIA MEDICA. Fourth edition, revised and enlarged. In two large and handsome volumes 8vo. Cloth, $10; leather, $12. (*Just issued.*)

SCHMITZ AND ZUMPT'S CLASSICAL SERIES. In royal 18mo. CORNELII NEPOTIS LIBER DE EXCELLENTIBUS DUCIBUS EXTERARUM GENTIUM, CUM VITIS CATONIS ET ATTICI. With notes, &c. Price in cloth, 60 cents; half bound, 70 cts.

C. I. CÆSARIS COMMENTARII DE BELLO GALLICO. With notes, map, and other illustrations. Price in cloth, 60 cents; half bound, 70 cents.

C. C. SALLUSTII DE BELLO CATILINARIO ET JUGURTHINO. With notes, map, &c. Price in cloth, 60 cents; half bound, 70 cents.

Q. CURTII RUFII DE GESTIS ALEXANDRI MAGNI LIBRI VIII. With notes, map, &c. Price in cloth, 80 cents; half bound, 90 cents.

P. VIRGILII MARONIS CARMINA OMNIA. Price in cloth, 85 cents; half bound, $1.

M. T. CICERONIS ORATIONES SELECTÆ XII. With notes, &c. Price in cloth, 70 cents; half bound, 80 cents.

ECLOGÆ EX Q. HORATII FLACCI POEMATIBUS. With notes, &c. Price in cloth, 70 cents; half bound, 80 cents.

ADVANCED LATIN EXERCISES, WITH SELECTIONS FOR READING. Revised, with additions. Cloth, price 60 cents; half bound, 70 cents.

SWAYNE (JOSEPH GRIFFITHS). OBSTETRIC APHORISMS. A new American, from the fifth revised English edition. With additions by E. R. Hutchins, M. D. In one small 12mo. vol. of 177 pp., with illustrations. Cloth, $1 25.

STURGES (OCTAVIUS). AN INTRODUCTION TO THE STUDY OF CLINICAL MEDICINE. In one 12mo. vol. Cloth, $1 25. (*Lately published.*)

SCHOEDLER (FREDERICK) AND MEDLOCK (HENRY). WONDERS OF NATURE. An elementary introduction to the Sciences of Physics, Astronomy, Chemistry, Mineralogy, Geology, Botany, Zoology, and Physiology. Translated from the German by H. Medlock. In one neat 8vo. vol., with 679 illustrations. Cloth, $3.

STOKES (W.) LECTURES ON FEVER. Publishing in the Medical News and Library for 1875.

SMALL BOOKS ON GREAT SUBJECTS. Twelve works; each one 10 cents, sewed, forming a neat and cheap series; or done up in 3 vols., cloth, $1 50.

STRICKLAND (AGNES). LIVES OF THE QUEENS OF HENRY THE VIII. AND OF HIS MOTHER. In one crown octavo vol., extra cloth, $1; black cloth, 90 cents.

——MEMOIRS OF ELIZABETH, SECOND QUEEN REGNANT OF ENGLAND AND IRELAND. In one crown octavo vol., extra cloth, $1 40; black cloth, $1 30.

TANNER (THOMAS HAWKES). A MANUAL OF CLINICAL MEDICINE AND PHYSICAL DIAGNOSIS. Third American from the second revised English edition. Edited by Tilbury Fox, M. D. In one handsome 12mo. volume of 366 pp. Cloth, $1 50.

—— ON THE SIGNS AND DISEASES OF PREGNANCY. First American from the second English edition. With four colored plates and numerous illustrations on wood. In one vol. 8vo. of about 500 pages. Cloth, $4 25.

TUKE (DANIEL HACK). INFLUENCE OF THE MIND UPON THE BODY. In one handsome 8vo. vol. of 416 pp. Cloth, $3 25. (*Just issued.*)

TAYLOR (ALFRED S.) MEDICAL JURISPRUDENCE. Seventh American edition. Edited by John J. Reese, M.D. In one large 8vo. volume of 879 pages. Cloth, $5; leather, $6. (*Just issued.*)

—— PRINCIPLES AND PRACTICE OF MEDICAL JURISPRUDENCE. From the Second English Edition. In two large 8vo. vols. Cloth, $10; leather, $12. (*Just issued.*)

—— ON POISONS IN RELATION TO MEDICINE AND MEDICAL JURISPRUDENCE. Third American from the Third London Edition. 1 vol. 8vo. of 788 pages, with 104 illustrations. Cloth, $5 50; leather, $6 50. (*Now ready.*)

THOMAS (T. GAILLARD). A PRACTICAL TREATISE ON THE DISEASES OF FEMALES. Fourth edition, thoroughly revised. In one large and handsome octavo volume of 801 pages, with 191 illustrations. Cloth, $5 00; leather, $6 00. (*Just issued.*)

TODD (ROBERT BENTLEY). CLINICAL LECTURES ON CERTAIN ACUTE DISEASES. In one vol. 8vo. of 320 pp., extra cloth, $2 50.

THOMPSON (SIR HENRY). CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS. Second and revised edition. In one 8vo. volume, with illustrations. Cloth, $2 25. (*Just issued.*)

—— THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA AND URINARY FISTULÆ. From the third English edition. In one 8vo. vol. of 359 pp., with illus. Cloth, $3 50.

—— THE DISEASES OF THE PROSTATE, THEIR PATHOLOGY AND TREATMENT. Fourth edition, revised. In one very handsome 8vo. vol. of 355 pp., with 13 plates. Cloth, $3 75.

WALSHE (W. H.) PRACTICAL TREATISE ON THE DISEASES OF THE HEART AND GREAT VESSELS. Third American from the third revised London edition. In one 8vo. vol. of 420 pages. Cloth, $3.

WATSON (THOMAS). LECTURES ON THE PRINCIPLES AND PRACTICE OF PHYSIC. A new American from the fifth and enlarged English edition, with additions by H. Hartshorne, M.D. In two large and handsome octavo volumes. Cloth, $9; leather, $11. (*Lately issued.*)

WÖHLER'S OUTLINES OF ORGANIC CHEMISTRY. Translated from the 8th German edition, by Ira Remsen, M.D. In one neat 12mo. vol. Cloth, $3 00. (*Lately issued.*)

WELLS (J. SOELBERG). A TREATISE ON THE DISEASES OF THE EYE. Second American, from the Third English edition, with additions by I. Minis Hays, M.D. In one large and handsome octavo vol., with 6 colored plates and many wood-cuts, also selections from the test-types of Jaeger and Snellen. Cloth, $5 00; leather, $6 00. (*Lately issued.*)

WHAT TO OBSERVE AT THE BEDSIDE AND AFTER DEATH IN MEDICAL CASES. In one royal 12mo. vol. Cloth, $1.

WEST (CHARLES). LECTURES ON THE DISEASES PECULIAR TO WOMEN. Third American from the Third English edition. In one octavo volume of 550 pages. Cloth, $3 75; leather, $4 75.

—— LECTURES ON THE DISEASES OF INFANCY AND CHILDHOOD. Fifth American from the sixth revised English edition. In one large 8vo. vol. of 670 closely printed pages. Cloth, $4 50; leather, $5 50. (*Just issued.*)

—— ON SOME DISORDERS OF THE NERVOUS SYSTEM IN CHILDHOOD. From the London Edition. In one small 12mo. volume. Cloth, $1.

—— AN ENQUIRY INTO THE PATHOLOGICAL IMPORTANCE OF ULCERATION OF THE OS UTERI. In one vol. 8vo. Cloth, $1 25.

WILLIAMS (CHARLES J. B. and C. T.) PULMONARY CONSUMPTION: ITS NATURE, VARIETIES, AND TREATMENT. In one neat octavo volume. Cloth, $2 50. (*Lately published.*)

WILSON (ERASMUS). A SYSTEM OF HUMAN ANATOMY. A new and revised American from the last English edition. Illustrated with 397 engravings on wood. In one handsome 8vo. vol. of over 600 pages. Cloth, $4; leather, $5.

—— ON DISEASES OF THE SKIN. The seventh American from the last English edition. In one large 8vo. vol. of over 800 pages. Cloth, $5.

Also, A SERIES OF PLATES, illustrating "Wilson on Diseases of the Skin," consisting of 20 plates, thirteen of which are beautifully colored, representing about one hundred varieties of Disease. $5 50.

Also, the TEXT AND PLATES, bound in one volume. Cloth, $10.

—— THE STUDENT'S BOOK OF CUTANEOUS MEDICINE. In one handsome royal 12mo. vol. Cloth, $3 50.

WINSLOW (FORBES). ON OBSCURE DISEASES OF THE BRAIN AND DISORDERS OF THE MIND. In one handsome 8vo. vol. of nearly 600 pages. Cloth, $4 25.

WINCKEL ON DISEASES OF CHILDBED. Translated by Chadwick. (*Preparing.*)

ZEISSL ON VENEREAL DISEASES. Translated by Sturgis. (*Preparing.*)

LANE MEDICAL LIBRARY

To avoid fine, this book should be returned on or before the date last stamped below.

JAN 30 1947
OCT 28 1963

R
708
F61
1874
LANE
HIST